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GLACIAL PROGRESSION IN THERAPY

Shall we cling to the old, outworn and illogical methods of treatment, thus following in the footsteps of authority, or the better way, meet each indicated condition with the indicated remedy?

A WEALTHY banker in Iowa was attacked with a paroxysm of gall-stone colic. For this his physician administered a hypodermic containing 1-4 grain of morphine. This was repeated every twenty minutes until he had taken four doses. Immediately after the fourth dose was taken the pain instantly ceased, the supposition being that the stone had either rolled into the duodenum or dropped back into the gall-bladder. Then they had a case of morphine poisoning to handle, and for some hours it was doubtful whether the man would live or die. It was one week before he recovered from the effect of the treatment sufficiently to return to his business.

No treatment being instituted in the interval, in due course of time the patient had a similar attack; but not being satisfied with the treatment he received on the first occasion, he called in a young physician recently settled in the town, who happened to be somewhat acquainted with the active principles and the methods of treatment based upon them. Following Dr. Abbott's oft-repeated reiteration of Burggraave's teachings of many years ago this physician gave his patient one granule each of hyoscyamine, strychnine arsenate and glonoin; this was repeated in half an hour, the pains having

been somewhat obviated in the meantime; again in fifteen minutes the dose was repeated, and by the end of an hour the man was so fully relieved that he ceased begging for hypodermics. The pain ceased with the same suddenness as in the preceding instance, but no toxic symptoms followed. Next morning the banker was back at his place of business, fully competent to fulfill his duties. The doctor had made a good customer, and the active principles had scored another triumph.

Not only the active principles, but scientific therapeutics. In such cases morphine acts by numbing the sensory nerves and hindering the transmission of painful impulses to the brain. The morphine is antagonized here by the intense pain of the disease, as it is well known that pain and morphine mutually antagonize and neutralize each other. The moment the stone rolls into the duodenum and the pain is relieved, the enormous doses of morphine the man has taken cease to be antagonized and the drug is left to exert its full toxic influence upon the system of the patient, who is moreover less able to resist it, as he is prostrated by the agonizing pains he has just passed through.

Hyoscyamine acts, however, not by diminishing the carrying power of the sensory

nerves, but by relaxing the spasm of the circular fibers of the biliary passages. The obstacle to the passage of the stone is largely a spasmodic contraction of these circular fibers, and the progress of the stone can only be accomplished as the irritability of these fibers becomes exhausted and they relax. This renders the progress of the stone exceedingly slow and agonizing. Hyoscyamine relieves this spasmodic contraction and relaxes the circular fibers, allowing the stone to progress rapidly through the tube with the minimum of pain. It has long been known that a perfectly smooth stone causes quite as much pain as the rough ones; and the first crude idea, that the pain was due to the irritation of the mucous surfaces by the rough stone, was dissipated by the earlier examinations made of the calculi passed.

It is thus evident that hyoscyamine is more directly a remedy for the pathologic condition than is morphine. Being more exactly suited to the pathologic condition, the relief is correspondingly more direct and satisfactory. As it relieves by obviating the pathologic condition and not by creating a new pathologic condition, as in the case of morphine, there is no intoxication to be combated when the stone is removed from the biliary passages.

We have taught this lesson again and again. It has never been called in question. It is acknowledged to be true by everyone who has studied the pathology of the disease and the physiologic action of the remedy. All those who read *CLINICAL MEDICINE*, and who have given study to active principles and the methods based upon them, know this and act upon it. The people who adhere to the old, irrational, perilous treatment of the paroxysms by the use of morphine, are those who do not read *CLINICAL MEDICINE* and who will not listen to the arguments put forth by the advocates of the active principles and of scientific medication.

But truth is mighty and will prevail. Every time a case of this kind occurs, it transfers the patient from the advocate of the old method to the practitioner of the new; and if this process goes on the evil will cure

itself. Those who do not care to investigate the new methods will quietly retire, and leave the field to newer men who are still capable of learning to use modern alkaloidal and other remedies.

This old, old world is a dreary place
For the man whose pass is a frowning face;
Who looks for the shadows instead of the light;
For the sordid and dull instead of the bright,
Who sees but the worry and labor and strife
Instead of the glory and sunshine of life.

—E. C. Aurin

IT'S WORKING OUT

Gradually the main features of the Hallberg-Engelhard program are being evolved; and while they do not appear together, they may be put together—and considered with edification by the physician. First, the physician is to be by law forbidden to dispense his own medicine and compelled to do everything by prescription. Second, the pharmacist is only to supply U. S. P. and N. F. remedies, and those receiving the approval of the Council on Chemistry and Pharmacy. Third, the pharmacist is to receive the title of Doctor of Pharmacy. Fourth, the Doctor of Pharmacy is to be empowered to prescribe and administer drugs in case of "necessity." *Nota bene: He is to be the judge of when it is necessary. See?*

By the establishment of these four points a whole lot of troublesome questions will be settled—and a lot of troublesome doctors at the same time. The evolution of the program may probably be watched in the drug journals better than elsewhere. Before you laugh at it too heartily, just read the account of the N. A. R. D. meeting in Chicago, and note the unanimity and enthusiasm with which that meeting welcomed Engelhard's proposal that physicians be forbidden by law to dispense medicine. A vote of thanks, a rising vote, without a dissenting voice, indicated the sentiment of the pharmacists on that question. And little wonder!

While the movement to restrict pharmacists to the U. S. P., N. F. and indorsed-by-Council remedies did not receive much encouragement, yet it was introduced. Its foot is on the carpet. The camel's nose is

in the tent and the rest of the animal may be expected to follow in due time. We are not alarmists; we only say, keep your eyes open. Doctors for doctors.

THE SICKROOM AND THE LABORATORY

The Journal of the American Medical Association for September 28 calls attention editorially to the long-continued contest between the practising physician and the physiologic laboratory, over the question of iron. Although the practising physician knew well, through abundant experience, that the administration of inorganic iron had an almost specific effect in increasing the amount of hemoglobin in chlorotic patients, yet many physiologic chemists were not ready to accept this fact at its face value.

Appreciating the limited power of the animal organism to synthesize complex substances from simple ones, they could not imagine that iron in simple organic forms, given by the mouth, could be built into the enormous hemoglobin molecule. Hence arose the use of many iron compounds from organic sources. They denied the possibility that inorganic iron could be utilized for hemogenesis. Bunge claimed that inorganic iron merely combined hydrogen sulphide or similar products of intestinal putrefaction which otherwise would have combined with the assimilable proteid compounds of iron and thus prevented their passage through the intestinal walls.

It was shown, however, that there is no good reason for believing that there is any unusual formation of hydrogen sulphide or other iron precipitant in the intestine in chlorosis. Besides, the substitution of other precipitants of sulphides, like bismuth or manganese, did not have the same effect as iron. The evidence collected by Meyer seems sufficient to settle beyond reasonable doubt that inorganic iron *can* be and *is* absorbed by the intestines and utilized in the formation of hemoglobin when given in the usual medicinal doses.

We are very glad to read this in *The Journal of the American Medical Association*, and we hope that every member of the

Council of Chemistry and Pharmacy will read it and take it to heart. They need it. We clinicians have been telling these people this for many years, but they would not listen to us.

It is easy to find fault, if one has that disposition. There was once a man who, not being able to find any other fault with his coal, complained that there were too many prehistoric toads in it.

—Mark Twain

"THERE'S A REASON"

Thomas Beecham is dead. Did you ever hear of him? Surely! The pill man; everybody has heard of him. Why? Because he knew how to advertise. Is that the only reason? Is there any significance in the fact that not only Beecham but every other man who put a purgative on the market made good on it? What lesson has the medical profession taken from this? To sneer at it and decry the habit of taking such articles.

But are we very sure that the cathartics are not needed? How does it come that the whole world takes cathartics, pays millions of dollars for them and makes everybody rich who puts a new "patent" cathartic on the market, if they are not needed? If every phenomenon has its cause, it seems no less certain that every success has a truth back of it.

A good many years ago we had for a patient an old soldier of the Civil War who had been shot in the lungs, and the bullet had carried into his lungs some fragments of his blouse. For many years thereafter he was troubled with a constant cough and occasionally spit up a little bit of the cloth. This man found life made tolerable and easy by the use of a remedy on which he set the greatest store, affirming that he would have been in his grave many years before if it had not been for this remedy. What was it? A common patent purgative pill.

Why did he obtain such relief from this pill? Study our doctrine of intestinal auto-toxemia, its causes and the remedy for it, and especially the results of fecal toxemia, or toxins of fecal origin circulating in the

blood, and see if we cannot find therein a reason for the unexceptional and great success of the purgative. The assumption that credits the success of quackery in all forms to the public being fools is not creditable to the public, much less to us. Where we are right and they are wrong, we certainly must be stupid, if, with such an enormous advantage as this, we are unable to convince the public of it.

Don't be too "cock sure" that what the public generally look upon as a good thing, isn't. Many of the best ideas we have can be shown to have been begot in empiricism, nurtured in "old-womanism"—or so-called quackery and commercialism—growing up in spite of medical science, which later adopted it only too gladly. Don't scoff and sneer in ignorance. Investigate—really look into things. Seek behind the surface for the *real truth*.

Not in the clamor of the crowded street,
Not in the shouts and plaudits of the throng,
But in ourselves are triumph and defeat.
—Longfellow

THE CHEAPEST LUXURY

Cold water may be justly regarded as being the poor man's luxury, its crowning service being conferred by the bath. It is hard to overestimate the invigorating virtue of this noble institution, to which every fine physique owes so much of its vitality. Apart from its physiological effects, moreover, there is an unmistakable moral advantage in bathing, giving rise to a popular adage in behalf of cleanliness. To one accustomed to a morning dip there is no event of the day so momentous in its beneficent influence, and even those who cannot bear the temperature most tonic, having recourse to a warmer plunge, will naturally feel the indescribable glow resulting from its use.

This new exhilaration of bathing is eminently Saxon, and should be widely encouraged in our climate where conditions favor the highest development of the physical man. It is even a redeeming feature of the athletic craze that, of all things, it encourages bathing as a prerequisite to the

finest muscular activity. The deleterious consequences of overtraining or violent exercise are frequently too apparent, yet no such results attend a bath and rub-down. With so many obvious advantages, however, comparatively few people bathe sufficiently, being averse to the inconvenience of the process rather than ignorant of its benefits. Nothing is attained without trouble. It seems a pity that constitutional laziness should deprive us of so simple and ready a boon as bathing.

PHYSICAL HARMONY

It is instructive to observe the marvelous symmetry of a normal physique. Consider, for instance, how from birth to old age each separate organ bears a harmonious relation to every other, the development of each part being constant and uniform, so that the vital energies are finally subdued only through the process of natural, inevitable decay. This perfect adjustment is due to the perfect action of the bodily organism in its entirety, individual functions contributing to the general well-being or health.

Should the heart's action be irregular the supply of blood is correspondingly affected and the distribution of the nutrient elements, requiring proper assimilation, unfavorably influenced. For this irregularity of the heart no remedy will so favorably influence it as cactin. Too much blood may be supplied to one part, and too little to another, a weak circulation occasioning one series of physical phenomena and too powerful an action another, both resulting in a disturbance of the normal adjustment upon which true health directly depends. As remarked before, there is no remedy which will equalize the circulation and regulate the heart under these conditions so well as cactin.

Could we preserve through life an ideal and symmetrical development of every part, the body would maintain its vigor for a much longer span than is possible with our present disregard of hygienic laws—the due consideration of food, exercise and sleep, to which few people devote systematic attention. Given a physical constitution augur-

ing bodily and mental sanity, longevity should naturally ensue. It is through ignorance, laziness, or indifference that life is often curtailed and years that should be happily prolonged subject to premature decline.

THE CHICAGO DEPARTMENT OF HEALTH

There is a whole world of significance in the following extract from the *Bulletin* of the Chicago Department of Health: "In the late summer scarlet-fever and diphtheria threatened South Chicago. The ministers, the teachers, and police, the physicians, the people and the Department, all worked together and stamped it out. The next epidemic was around the stock-yards; again the same agencies got to work and this focus is being rapidly circumscribed."

This means that the Department of Health is conducted with judgment. The influential elements outside of the Department and medical profession, instead of being antagonized, are brought into harmony with them, and the result is, as the above quotation shows, *Success!*

SHAKSPERE AND HIS KNOWLEDGE OF MEDICINE

Many of our readers have doubtless read with pleasure and appreciation Dr. Wainwright's quotations from Shakspeare, in *The Dietetic and Hygienic Gazette*. We hope you have. We hope a great many of you take *The Dietetic Gazette* and read it. It is all good, but nothing that has appeared in the past year has so pleased the editor's literary sense as these quotations from Shakspeare, illustrating the knowledge of medicine and surgery of the great dramatist.

To say that this knowledge is remarkable is to say little. It is one more side of this many-sided man. The wonder is not more that Shakspeare should have had such an insight into medicine than that any man writing in his day should have possessed such an insight.

We are glad to announce that Dr. Wainwright has been persuaded to publish these notes in book form, and that the book has been issued by the publishers of *The Gazette*, from whom it can be obtained by sending the small price of two dollars and fifty cents. No Shakspeare library should be deemed complete without this work. No lover of Shakspeare should be without it; and no physician can possibly spare it from his library. Dr. Wainwright's explanatory notes add immensely to the interest of the quotations.

What physician can afford to be anything less than a cultured, educated gentleman, and how can any man be this who does not render himself familiar with Shakspeare? This was particularly impressed upon us recently, while perusing the chapter on Shakspeare in Taine's "English Literature." We were especially impressed with the total failure of the gifted Frenchman to appreciate Shakspeare, and the place which he filled in English mental development.

To Taine, Shakspeare's work was simply a specimen of an early and crude form of literature, which has since been supplanted by the better developed and more finished productions of the day. Oddly enough, this brought forcibly to mind one of Conan Doyle's amusing skits, in which he describes his French hero, Colonel Girard, in his attempt to grasp the meaning of the English love of fox-hunting.

Men should study literature chronologically, beginning with Prometheus Bound, and certainly not stopping with Shakspeare. Nevertheless, the great writer established the standard by which all previous and subsequent dramatic works, as literary efforts, have been judged and will long continue to be judged.

We are growing old. It is getting more and more difficult for us to feel an interest in things; and we feel personally grateful to Dr. Wainwright, that he has published a book which arouses a new interest in our lives. We hope the work will be so successful as to encourage Dr. Wainwright to give the profession further specimens of this kind.

Poetry is completed. Tennyson and his school gathered up all the remaining frag-

ments, and there is nothing left for the present or the future poet but that debased and debasing imitation of it, that caricature, the burlesque. But the art of reproducing in new forms of beauty the great thoughts that have come down to us for ages is not exhausted; nor will it be, so long as the steady progressing of humanity creates new forms of expression, new modes of thought; and if anyone doubts that old truths need new expression, new presentations, to bring them to the comprehension of humanity, all he needs is to take a copy of *The Dietetic and Hygienic Gazette*, note what it has to say on matters dietetic and hygienic, and go forth among the humanity that environs him and ascertain by direct questioning how far those old truths are so familiar to men as to form a part of their daily lives. The quest will at least be edifying to the seeker.

He that sweareth
Till no man trust him,
He that lieth
Till no man believe him,
He that borroweth
Till no man will lend him;
Let him go where
No man knoweth him.

—Hugh Rhodes

THE TREATMENT OF DYSENTERY

In *The Lancet* for December 7 Sandwith discusses the treatment of dysentery.

In the bacillary variety he says that the first drug to be given is something to clean out the bowel; and that it is surprising how much feces may be retained when a man is passing as many as thirty motions in twenty-four hours. It is always safe to assume that the patient, until he comes under your care, has been taking an improper diet. He gives quinine only if there is suspicion of malarial cachexia.

In the amebic form he gives substantially the same treatment in general; beginning with opiates, with morphine hypodermically, following with bismuth salicylate, 15 grains every four hours, or one dram every four hours. If an astringent is advisable tannigen serves well. He speaks favorably of the treatment by ipecacuanha, following

Murchison's method, giving the powder, 20 to 40 grains, in a bolus, with the usual precautions to prevent vomiting. He does not seem to be aware of the existence of emetine and of its superiority. He has never seen any good from the continued administration of calomel, and thinks he has seen deaths in elderly feeble patients caused directly by it.

For twenty years he has preferred the treatment by magnesium sulphate, with or without sodium sulphate. He has scarcely anything to say of quinine, mentioning it simply as used by Strong in the form of rectal enemas; Sandwith, however, preferring silver nitrate.

The writer has been experimenting recently with a chemically pure emetine prepared in the laboratories of The Abbott Alkaloidal Company. This he finds about twelve times stronger than the emetine usually supplied, which is a mixture of the three alkaloids of ipecacuanha, with apparently a good deal of inert matter. The pure alkaloid is somewhat more likely to cause vomiting, because it is dissolved much more quickly than the impure. This necessitates smaller doses. Using tablets containing 1-67 of a grain, however, he has found that patients will usually retain six or seven of these tablets, if swallowed whole, without any water, immediately after the patient lies down in bed, with instructions to remain absolutely quiet for half an hour. As a rule, nausea does not occur under these conditions. Given to patients suffering from the insomnia resulting from the stoppage of an accustomed use of morphine, emetine thus administered has a distinct effect in inducing sleep, although not nearly so marked as in alcoholics. The general nervous condition of the patient, however, on the day following such a dose is markedly improved.

SUBSTITUTION IS GROWING

The evil of substitution in the dispensing of physicians' prescriptions is growing to an alarming extent. The argument that "it is just as good," is an evidence that the article recommended possesses merit, and it is an

outrageous injustice to the physician and patient alike to substitute anything for the medicines prescribed.

The person who is primarily interested in a prescription is the one who writes it, and it is supposed to call for the medicine which in the physician's judgment is what the patient requires. The patient consults the physician because he thinks the doctor can render him valuable service and any practitioner who has any conception of his high calling will prescribe only the remedies he thinks are likely to produce the best results.

No medical man is worthy to be called such if he does not exercise as great care in the selection of his remedies as he would in the preparation of his patient, instruments, and his hands previous to the performance of a surgical operation. To put it stronger, the physician is as culpable who is careless regarding medicines prescribed, as if he were negligent or unclean while performing a surgical operation. Every surgeon of any standing sees to it that his assistants dress his cases properly and that the antiseptic solutions are of the nature and strength that he desires. How many physicians are so careful about remedies they prescribe for internal use? We are charitable enough to believe that the average pharmacist is honest, but we all know that there are some druggists who are not and who would unhesitatingly resort to substitution to make ten cents.

We are suspicious of "economical" doctors and druggists; economy in these professions is dangerously close to dishonesty. It is undoubtedly a fact that substitution could not exist to any great extent, were it not for the carelessness amounting to almost criminal negligence on the part of the physician. The doctor has done but half his duty when he prescribes for his patient. He should see to it that his prescription is properly filled and never will substitution be reduced to a minimum until the physician who writes the prescription demands that it be filled exactly as he wrote it. This editorial will not reform any dishonest druggist but it may some careless doc-

tor. If a man is dishonest there is no more use in preaching honesty to him than there is in preaching cleanliness to vermin. This matter is getting serious and it is time to call a halt. If pharmacists and physicians would but be honest instead of subservient slaves of greed, trifling with life and death in order to acquire a few handfuls of yellow dross, which they know full well they must leave upon the threshold of eternity, we would have no cause for complaint. The two foulest frauds and most heinous humbugs in all hell's unclean hierarchy are unquestionably the unscrupulous and dishonest doctor and druggist.

VALUABLE STUDIES OF ERGOT

In *The Medical Recorder* for November 23 Alfred P. Livingston contributes a valuable article upon "Ergot." Dr. Livingston has for years made a special study of ergot; hence his conclusions are of exceeding value. In the present paper his observations relating to ergot are derived from its obstetric uses. The general deductions which he thinks warranted from his personal experiences are:

1. Its direct and specific effect is the contraction of unstriated muscular fiber or other involuntary contractile tissue. Here he comes into direct opposition with those who have recently stated that ergot is not useful but harmful in cerebral hemorrhages, because it cannot act on the muscular fibers of the cerebral arteries, since they have no muscular fibers. Dr. Livingston says that no other effect of ergot has more positively been demonstrated than the relief of congested states in the brain. It must therefore act upon some other contractile tissue besides the unstriated muscular fiber.

2. It does not markedly contract that which is normal in tone.

3. It is emphatic in its contraction of that which is lacking in tone.

4. It is striking in such effect in proportion to the recency of occurrence of the atonic state in such fiber.

5. Its widest field of usefulness is its application to the muscular coats or other con-

tractile tissue of weak and relaxed blood-vessels.

6. It tends to equalize vascular tension, etc., to distribute the blood equally throughout the body, to restore or promote functional activity of glands and organs generally and vasomotor centers particularly, to promote sleep, to relieve pain, nervousness and spasm, to prevent or modify the effects of autotoxins and bacteria, to promote assimilation, absorption of exudates and elimination of waste, to relieve nausea, to prevent the ill and dangerous effects of anesthesia, to promote the healing of wounds, to prevent or modify inflammation, to arrest capillary hemorrhage, to relieve narcotic poisoning, and to make the work of the heart more easy and so to prevent its exhaustion or paralysis.

7. It is useful to restore tone in the unstriated fiber of the walls of the hollow viscera, stomach, bowels, bladder, uterus, etc.

8. The prevalent popular notion existing in the medical profession that it is a dangerous drug and likely to produce ergotism, is unfounded as regards the modern pharmacopeial preparations, at least as regards such as he has used during the past thirty-four years.

9. Its local action upon the stomach is often offensive, especially if full doses are given; its absorption from the stomach is uncertain, both as to promptness and degree, and therefore,

10. Its administration should be limited as much as possible to hypodermic injection, which assures immediate effect, admits of exact regulation of dose, and avoids nausea and other ill effects of its administration per os.

These deductions, Dr. Livingston tells us, are wholly founded upon his clinical experience. This he considers the only reliable guide as to the applicability of any therapy to disease. The indications for the application of ergot, therefore, he considers to be the recognition of lack of tone in unstriated muscular fiber or other involuntary contractile tissue; and on that single thread he hangs all the manifold indications for ergot, and its myriad utilities in therapeutics.

From this Dr. Livingston goes on to produce a remarkable array of indications for the administration of ergot. Practically, his indication is loss of balance of circulation, for if spasm of the blood-vessels exists in any one part, with local anemia resulting, he looks upon this as evidence of weakness of the contractile coats of some blood-vessels, and so gives ergot. If the walls of the blood-vessels are unusually weak or greatly strained he gives ergot. Inflammation of limited areas he treats with ergot. Atony of the hollow viscera, disorders of assimilation and elimination associated with the minuter circulation, impaired functional activity, he looks on as an indication for ergot. In fact, if there is too much blood or too little in any one part, ergot is given.

He thus gives a tremendous range to his favored remedy. In truth, it seems difficult to exclude anything if we allow the correctness of such premises. Dr. Livingston apparently gives to ergot the place which strychnine holds with a large number of the medical profession. Strychnine energizing every function and every tissue in the body, would necessarily be indicated whenever there would be a lapse of functional activity in any part. But then, do we not take the broad ground that illness of any description is indicative of a lapse in functional activity of one or other part of the body?

We cannot believe with Dr. Livingston in his universal application of ergot, nevertheless there is a great deal to be learned from the observations made by this excellent clinician, who has studied this drug for a life-time in the field of clinical therapeutics.

TREATING HEART DISEASE

The Practitioner for October contains an unusually interesting article on the "Treatment of the Diseases of the Heart," by John Hay. Among other good things Dr. Hay makes the following significant remark: "In the matter of dosage I am convinced that the tendency is to be satisfied with the administration of too small doses of digitalis and squill; and firmly believing that when we are satisfied in a particular case that

digitalis is the best drug to be given, we must push it until the results we are aiming at, or until we get signs of its physiologic action. It may be objected that in so doing we are running risks; but if so, the risks are justifiable."

He also says the dyspnea is due partly to the heart stress and partly to the uremia. "In such patients the exhibition of digitalis often increases the distress, and I have seen marked relief on stopping its administration. The best treatment is purgation with calomel and salines, stopping all food except some water, tea and a little bread and butter; and the administration of such drugs as the benzoates or hippurates of ammonium, together with the infusion of buchu. Strophanthus or citrate of caffeine may be given, as these drugs do not contract the arterioles. For the restlessness and dyspnea in such patients, chloral in my experience is of the greatest benefit and can be prescribed with caffeine if thought advisable."

We might interject the remark here that chloral and caffeine form a chemical union, the result of which is an excellent cathartic.

FACTS ABOUT DIGITALIN

Ten years ago Henry Beates, of Philadelphia, published a remarkable paper in which he called attention to the superiority of Germanic digitalin over all the other preparations of digitalis, his conclusions being that this substance is a derivative not contaminated with other active principles, possessing uniform and unvarying strength, relatively free from that property which produces gastric irritation, a powerful stimulant to the whole cardiac apparatus, and a reliable and pronounced stimulant to the vasomotor system, which does not develop cumulative action, the adult dose ranging from 1-10 of a grain as a minimum to 1-2 grain as a maximum. He found it applicable to all lesions of the heart, with the single exception of mitral regurgitation complicated by dilation of the auricle.

Last February, ten years later, Dr. Beates stated that his further clinical experiences have more conclusively proven the thera-

peutic value of this digitalin. During these ten years he has treated numerous cases with this product, in the doses and manner outlined, with the most satisfactory results. He says: "I cannot too strongly urge upon physicians the liberal use of digitalin in cases with circulatory disturbances. In collapse of pneumonia, typhoid fever and in surgical shock as large as two-grain doses in 25 cubic centimeters of salt solution, hypodermically, has been successfully employed in several instances." Dr. Beates, as the head of the Pennsylvania State Examining Board for many years, is a man of unquestionable standing; more than that, in his ability as a clinical observer he has few rivals and no superiors, even in that center of medical culture, Philadelphia. Such testimony is of infinitely greater value than that of any number of even the most accomplished pharmacists.

A mood, which mayhap brings us pain,
Will guide our pathways now and then.
A quest for words of praise, in vain,
May cast us down with other men.
But, though the storms ahead we ken,
There naught can utter gloom impart
Nor love leave off and hate begin
When there is sunshine in the heart.

—F. W. Taylor, Jr.

THE VOLATILE OILS

One of the numerous neglected fields of materia medica at present is the study of the volatile oils. These are generally set down in the views of the profession as all represented by the oil of turpentine. All volatile oils act in small doses as stimulants, in large as irritants of the urinary passages, through which they are eliminated. Nevertheless, the little study that has been given to them shows an enormous difference in their action.

For instance, they are all believed to have more or less power as antiseptic, and yet experiments made with them show that this varies considerably. The most powerful in this respect is the oil of cassia, and next to it the oil of cinnamon. Oil of gaultheria, oil of eucalyptus and oil of cajeput stand far down the list as compared with the above.

Oil of erigeron has a well-deserved reputation as a hemostatic in hematuria, and the writer has repeatedly availed himself of this power, finding the drug exceedingly effectual in hemorrhages, especially from the kidney. In one case of hemorrhage, from tubercular disease of the kidney and the bladder, however, he found the oil of eucalyptus superior in value to the oil of erigeron.

These oils also all have a useful action in repressing an excessive secretion from any of the mucous tracts, although they probably act with more efficacy on the genitourinary mucosa than on any other. A valued correspondent and old friend, Dr. Thomas Musgrove, of Washington, has just written in a private letter to say that he has found agrimony of considerable benefit in the treatment of his asthma, causing a large decrease of mucous discharge from his lungs. Agrimony contains tannic acid and a volatile oil, on the latter of which its effect largely depends. He says it is the only drug he has used that has relieved him without any bad results. Morphine, atropine, ammonia and many other drugs acted only temporarily, but agrimony caused the mucous to decrease in a week, and for two months he had not needed to take any. He learned of this drug through *Ellingwood's Therapeutist*, as he tells us.

Treat your patients so that you will be satisfied with yourself; after all it depends not so much on what others think of you as what you may think of yourself.

—Albright

SCOPOLAMINE-MORPHINE ANESTHESIA

At the last meeting of the Illinois State Medical Society Dr. C. U. Collins presented an important report upon "Scopolamine and Morphine as a Preliminary to General Anesthesia." Dr. Collins first discussed the question of anesthesia by the older methods. He mentioned the irritating effect of ether on the respiratory tract and the kidneys, also Bevan and Favill's investigations showing that chloroform could produce a destructive effect on the cells of the liver and kidneys. "It is not yet known how ether and chloroform produce anesthesia,

and the profession will be working more or less in the dark, without being able to avoid possible unknown dangers, until this has been discovered. No method of general anesthesia has yet been devised which measures the dose of anesthetic each patient receives in a given time. The preliminary stage, just before unconsciousness, gives very unpleasant sensations to the patient. Many dread the anesthetic more than the operation. While much of this may be avoided by a skilled anesthetist, the natural fear and aversion to passing through unknown dangers, unconscious and helpless, can not be avoided. This feeling is so well recognized that some sudden deaths in the beginning of chloroform anesthesia have been attributed to fright. General anesthetics require constant administration to keep up the effect. After the anesthetic is stopped, the patient feels the smarting, burning pain of the injured tissues for some hours. Following either chloroform or ether there is generally more or less vomiting. In abdominal operations this may cause the abdominal muscles to pull on the incision, adding greatly to the suffering. In any case it adds to the discomfort and postpones the giving of fluids by the mouth."

These dangers and imperfections prompted some of the profession to seek other means of producing anesthesia. Spinal anesthesia has obvious limitations as well as dangers of its own.

Dr. Collins then reviewed the method of producing anesthesia introduced by Schneiderlin in 1900. He also called attention to the fact that some reporters seemed to think that if one of their patients died from any cause whatsoever, after the administration of scopolamine-morphine, this should be blamed for the death. For instance one physician reported a death from cerebral anemia as caused, first, by the effect of trional; second, by the effect of pelvic engorgement incident to the oncoming menstruation; third, by the effects of the scopolamine and morphine; and the report was then headed, "Death Following Scopolamine-Morphine Injection!" Another reported suppression of urine following a prostatec-

tomy, attributing the anuria to scopolamine and morphine, although it is well known that anuria follows operations on the genito-urinary tract, and did so long before the scopolamine-morphine combination had been thought of.

He then reviewed Dr. H. C. Wood, Jr.'s, notorious article with which he finds the following faults: Wood gives no reference to the literature, so that no one can go over the same ground and consider the justness of his conclusions. He does not tell the quantity administered in any of the cases nor the method of administration. He says that in 69 percent of cases the anesthesia was unsatisfactory, when according to his own figures the percentage is only 43. Dr. Collins intimates that the same inaccuracy may extend to Wood's conclusions, and says that Wood winds up with the most astonishing statement that he thinks "it must be either a very bold or a very ignorant surgeon who persisted in its use."

Dr. Collins says that he is willing to pay very good attention when a pharmacologist tries to tell him that scopolamine and hyoscine are identical. When the pharmacologist assumes to tell him that as a surgeon he is either bold or ignorant if he pursues a certain course, he must confess that he thinks the pharmacologist outside of his province. Further he adverts to Wood's remark that the danger from ether or chloroform being diminished by the preliminary use of scopolamine and morphine is by no means proved or probable, giving his reasons in some experiments he made on dogs, where ether was used as a general anesthetic, with a preliminary injection of morphine alone, and sarcastically remarks that comment is unnecessary.

Dr. Collins' personal experience began in January 1905, when he witnessed an operation by Ries under scopolamine-morphine. In June of that year he applied the same method himself, successfully, noting one disadvantage, which was that every movement of the operator had to be made slowly as in local anesthesia or the patient would be aroused. This delayed his adoption of the method until Seelig's article appeared, ad-

vocating the small doses preliminary to general anesthesia, when in October, 1905, Collins again commenced the use of the method.

One significant remark he makes is this: "The nurses on the floor were not told of the change in the order of usual things, but before many days they began to ask what we were doing in the operating room that made it so much easier to care for the patients immediately following the operation. They noted that the patients slept for several hours after the operation and there was a marked diminution of postoperative vomiting."

In December of 1905 Dr. Collins had to undergo an operation himself, and having used the preliminary injection of scopolamine and morphine in twenty-five cases, he determined to employ it upon himself. The result was so satisfactory that on his recovery he firmly resolved that his patients should have the benefit of this anesthesia that had added so much to his own comfort. This resolve he carried out, and at the time of his report he had employed it in three hundred and fifty cases.

At first he employed chloroform following the scopolamine-morphine, but for several months he had substituted ether, and had not encountered any of the suggested dangers. In this series he had eight deaths, none of which could be attributed to the scopolamine and morphine. He says that he does not now recognize any contraindications to these preliminary injections. They are given to each patient as a routine measure.

Fifteen of his patients were between 60 and 70 years of age, six between 70 and 80, and four were more than eighty; seven were between six and ten years. Children got the usual dose. In two of the patients the hemoglobin had been reduced 40 and 50 percent by uterine hemorrhages.

He enumerates the following advantages from the method.

1. The tranquil, drowsy state of mind which it produces in the patient before the general anesthetic is administered. If it did nothing else this should be sufficient to

give it a permanent place in the anesthesia of the future.

2. A great deal less of the general anesthetic is required.

3. Scopolamine produces dryness of the throat which is very desirable when ether is administered.

4. The patient usually sleeps three or four hours after the operation. The smarting, burning pain of the incision has usually ceased before the patient awakes.

5. The postoperative vomiting is markedly lessened.

The only disadvantage he says is the varying effect of the single dose on the patient. A few will not get the full benefit of the preliminary, although they are all benefited to some degree.

In the discussion which followed Dr. Channing W. Barrett of Chicago said that in November of the preceding year he began to use the H-M-C preparation, and it gave such good results that he had been encouraged to continue its use. When first commencing its use, the anesthetiser who was experienced in the older method would find the new one interfere with and confuse the reflexes, but not to the extent that morphine alone did. With a little experience chloroform anesthesia becomes very easy with the preliminary hypodermic anesthetic. In some cases the heart-action was decidedly increased, especially when the patient was carried from the bed after the preliminary anesthetic to the operating room; that the pulse moved slower and slower as the operation progressed until it finally became normal. Again, it was noted that patients had an easier time after the operation than after chloroform and ether. He described one case, where the advantages of this anesthetic were particularly notable! The patient was brought in at night; she had lost much blood from a fibroid; a blood-count made next morning showed 40 percent hemoglobin, the red cell count 2,800,000. Under the circumstances the propriety of a radical operation was questionable, but as the patient was under hyoscine, morphine and cactin, it was thought best to clean out the diseased endometrium causing the

hemorrhage. Without further anesthesia the uterus was curetted, and the patient came back a few weeks later sufficiently recuperated for a radical operation.

In another case there was a four months' pregnancy and incarcerated uterus. All efforts to return the uterus to position under general anesthesia had failed. The patient was given an injection of H-M-C, with very little other anesthetic; the abdomen was opened, a pus tube removed, adhesions separated, the uterus brought forward, and the patient continued with her pregnancy, which was now seven months along. He said he had been well pleased with this anesthetic in obstetric cases.

Dr. James W. Hamilton, of Mount Vernon, said that one of his objects in coming to the meeting was to hear this paper. He had been conducting a series of experiments on anesthesia. He remarked here that the average doctor knows more about the technic of hysterectomy than he does about the technic of anesthesia. Last November his investigations of the statistics showed simply that there had been 12 deaths from this method of anesthesia. Up to that time he had employed it in 67 operative cases, three-fourths of them laparotomies. The youngest patient was fourteen months old, the oldest had passed the eightieth birthday. The child had a sebaceous tumor the size of an orange; the oldest patient an ovarian cyst, from which he withdrew an ordinary water-bucket of fluid. The H-M-C preparation was administered at 10 o'clock the night before the operation, the patient slept nicely through the night and all agitation and dread were overcome. The operations were done at 8 to 8:30 a. m. when another injection was given, followed by ether. He did not use chloroform any more. He found it took from one dram to one ounce of ether on an average for these patients, for an ordinary laparotomy consuming from 25 to 50 minutes. Not a single bad experience had been met; no muscular rigidity, which is one of the things most surgeons speak of from laparotomy. He did have, however, muscular rigidity, when the preliminary injection on the previous night was omitted. These

patients could be spoken to and would respond readily, but they were asleep again in a second or two. When disturbed very much the pulse increased markedly; when they had become tranquil the heart-action was decidedly lower. He was very careful about transferring patients from the bed to the operating room, using a wheel carriage, where they remain perfectly quiet. He did not speak to them very much.

He had been using this method in obstetrics, and thought there was where its greatest strength lay. He described one case, a primipara, 39 years of age, with a hard labor. He let the case take its course, as he wanted to watch the action of the drug. The patient delivered herself entirely, but she had a severe perineal tear, reaching clear down to the sphincter muscle. At no time did the woman complain of pain, and each time he spoke to her she answered intelligently. The pains were regular and strong, and the labor perfectly normal. The tear he sewed up without any pain.

This is one of the most important contributions to the subject that has yet appeared, on this side of the ocean. It will be seen that each speaker based his conclusions on abundant personal experience. They all agreed that the supposed dangers and inconveniences vanished, with a little experience in the management of the remedy.

AUTHORIZED SUBSTITUTION

A strong authorized effort—authorized by pharmacy *in toto*, supported by certain leaders in the organization of the American Medical Association—is being made to enable the pharmacist to substitute his own preparations for standard specialties. This is made ethical on his part by the endorsement of the leaders of his organization, and the now leaders of the medical profession would make it “disorderly conduct,” if no worse, for the doctor to prescribe or use anything but the substitute. This is one of the main points being striven for through the authorized scheme of criticism, substitution and defamation of the independent

doctor which is now so rife and so generally abroad in the land.

Let any doctor test for himself to see if well-known and satisfactory specialties are substituted to his satisfaction by the average retail pharmacist. Prescribe any of the first-class effervescent salts whose formulas, freely given, have been absorbed into the authorized record books of the pharmacist, and see what he will get. Let him order by its official name, cataplasma kaolini, a common clay poultice, from ten stores and see how results compare with antiphlogistine from which the authorized substitute was taken. Let him prescribe from ten stores liquor antisepticus, and see if what he gets corresponds to listerine, which it is intended to replace. Let him prescribe listerine, compare what he gets with an original bottle and see in how large a proportion the substances obtained smell, taste and react like the genuine.

Illustrations might be given indefinitely. The fact is that in all this scheme there is a colossal movement to provide substitutes for everything proprietary; to make it ethical and proper, by authority-endorsement, for the druggist to do what he is so anxious and always so ready to do, and to cram this down the throat of the doctor, nilly-willy; an effort to make “ethical” all along the line essential dishonesty, to wrest from the specialties manufacturer that which of a right is his; to make the doctor (alleging him to be a “scab” if he doesn’t do it) prescribe and accept these substitute things; to insist upon his using what the scheme and the schemers allege that he may and say that he must use, taking from him the right of choice, given by birth in God’s free air and fostered by all Americanism, to do that which in all honor he thinks is best for his patient and for himself.

EIGHTY-FIVE PERCENT UNCERTAIN PHARMACY GOOD ENOUGH?

The Daily Telegraph of London, England, said recently that it would come as a rude shock to those who need physicians, that in the City of London six out of seven bottles of medicine analyzed by the Corporation’s

officials were not properly compounded. Dr. Teed, the public analyst, said, among other telling things, that "a large number of people, even in the medical profession, are of the opinion that drugs are of little use, but from my recent experience I should doubt if they have ever been tried."

This is exactly to the point. There is something more in drug therapeutics than simply writing a prescription, which goes to any druggist that happens to be handy, and is filled by that druggist according to his own notions. Certainly if the London druggist follows the advice recently given by an American pharmaceutical journal and corrects the prescription by making it contain "what he thinks the doctor ought to have prescribed," our medical friends on the other side may well be pardoned for beginning to doubt the utility of drugs.

This is of special importance in England because there the separation between doctor and druggist seems to be only recently becoming a usual thing, instead of exceptional. The *Telegraph* article says that the difficulty in London is not adulteration of drugs, but the use of containers which may be larger or smaller than supposed, excipients being added by the bottle and not being measured. Besides this, the *Telegraph* refers to some articles losing their virtue with age, and others, like the cream of tartar, being liable to impurity.

**COLLECTIVE INVESTIGATION: A LEGITIMATE FIELD OF ACTIVITY FOR
THE J. A. M. A.**

When the management of *The Journal of the American Medical Association* has got through with its present avocation of vindictive fault-finding; when those marked for "slaughter" have been crucified, drawn and quartered; when the entire medical profession has been restricted to the use of U. S. P., N. F. and Council-approved preparations, and the manufacture of these restricted to the "great ethical houses" designated by the ring, there will still be a field and, we trust, some time for legitimate activity along lines that may be utilized for

the benefit of the medical profession proper—the real man that does things.

One of the most obvious and necessary of these is in the matter of collective investigation. The *Association Journal*, controlling vast amounts of the money of the profession and sustained by its money, which should be used for its benefit and not to promote personal preferences and outside interests, is peculiarly "well fixed" to take up this matter. It is of the utmost importance. There is not a chapter of medicine, obstetrics or surgery in which obscurities and disputed points cannot be found, many of which could be cleared away, and the practice of the profession established on much more definite lines, by accumulating and tabulating the experiences of physicians in every part of the country and in every walk of the profession, the consensus of this opinion from clinical experience being a much safer guide than any dog-kennel and bug-house theory.

Take any affection on the list, for instance malaria: We have never forgotten the comments of an old, experienced physician in the South, on one of the principal textbooks on the practice of medicine now in the hands of the medical students in most colleges. Perusing the chapter on Malaria, he said: "It is a mighty fine article but the writer does not know anything about malaria."

This is true of many of the articles in most of our so-called "standard" textbooks. They are necessarily compilations. In few instances is an author able to deduce from his own personal experiences more than a very small percentage of the statements which he makes.

For this reason we see the authors of popular textbooks compelled, in subsequent editions, to make the mortifying admission that the statements they made in their earlier editions were mistakes, which have to be corrected by investigations made on these points, by special observers—men of experience. It would destroy the superstitious reverence in which the textbook and its author are now held by most medical students, if the latter really knew how little of the work was actually done by the writer

or the compiler of the book, and how few of the statements made therein are based on his own personal knowledge and experience. No matter how wise any one man may be, or how learned, or how discriminating, or how extensive his research and reading, he cannot possibly know as much as the entire medical profession put together. From time to time, detached and rather feeble efforts at "collective investigation" have been made. Two of these are now conducted by independent medical journals, one in *The New York Medical Journal*, and a less pretentious but even more valuable one in the "Round Table" of *The Medical Standard*.

Small as are these efforts, they are sufficient to indicate what would be the value of such a movement if extended to the entire medical profession of America.

The work is an enormous one, the compilation, comparison and selection of these reports would take the time of a numerous staff of competent men, and the utmost care would be necessary to prevent wrong being done by intrusting such work to men who were prejudiced, instead of giving it to those who would give a faithful picture from the material assigned to them. We know this is hard work. It's a whole lot easier to stand around and find fault with others—a heap easier to tear down than to build up, and perhaps more remunerative for the time being; but what is *The Journal of the American Medical Association* for, and for what better purpose are its large funds being collected, than for exactly such work as this?

Destructive work may be necessary, but there comes a time when the public wearies of it and demands that something constructive shall appear, to show that the operations are after all resultant in a net gain to the rank and file of the Association. The profession's money is being used and for it the profession will demand something more than instruction as to what the doctor is to prescribe and where he is to buy his goods. The pharmacist has had his inning, let him step aside now and give the clinician the floor, and if the present management of the Association's *Journal* isn't

willing to do something for the members of the Association other than to trammel it—then—well, there *are* others.

Kings and Queens

Are facile accidents of Fame and Chance.
Chance sets them on the heights, they climb'd not there!

But he who, from the darkening mass of men,
Is, on the wing of heavenly thought upborne
To finer ether, and becomes a voice
For all the voiceless, God anointed him:
His name shall be a star, his grave a shrine.

—T. B. Aldrich.

THE DEATH OF PROFESSOR SENN

Dr. Nicholas Senn passed away January 2, 1908. Late in October he returned from a trip to South America. While in the high altitudes of Peru he first became conscious of the affection of the heart, which was the cause of his death.

Professor Senn was born in Switzerland in 1844. He came to this country in 1852 and settled in Wisconsin, receiving his preliminary education at Fond du Lac, and graduating in 1868 from the Chicago Medical College. After serving for eighteen months as an interne in the Cook County Hospital he settled in Ashford, Wisconsin, removing to Milwaukee in 1874. His rise in surgery, his chosen field of work, was meteoric, and in 1880 he became a professor of surgery in the College of Physicians and Surgeons, Chicago, in 1891 taking a similar position with Rush Medical College, removing to this city the same year.

The story of Professor Senn's professional work, of his numerous and important contributions to surgical knowledge, is familiar to the readers of *CLINICAL MEDICINE*. As an operator, as a teacher and as an original investigator he became equally famous. He was one of the first to carry the fame of the American surgeon to the other side of the water, where his work was known and appreciated. His reputation was truly international.

During recent years Professor Senn has devoted much time to travel. He has visited nearly every portion of the world, and has written most interestingly of what he

has seen. He took great interest in military surgery and was active in the national guard, both in Wisconsin and Illinois, and during the Spanish-American war he rendered most valuable service in the field.

Chicago owes him much. His gift of the "Senn library," a collection of invaluable works on medicine and surgery to the Newberry library—now transferred to the Crerar library—was one which placed the entire profession of this city and vicinity in his debt. To Rush Medical College he gave a building that carries his name.

The death of a man like this is truly a national loss.

HARE ON CACTUS—"BEFORE" AND "AFTER"

Physiological action.—The drug has been studied by Myers, Boinet and Teisser, who have found that it causes a distinct increase of arterial pressure, but does not slow the pulse, sometimes increases its rapidity. Myers has also shown that the drug is a stimulant to the vasomotor centers and to the motor ganglia of the heart muscle. It also acts as a stimulant rather than a depressant to the spinal cord.

Therapeutics.—Cactus grandiflorus has proved itself a good substitute for digitalis in certain diseases of the circulatory apparatus such as cardiac palpitation and weakness. It has also been found very serviceable as a remedy in cardiac failure the result of valvular disease, but in all such cases seems to act best when added to some more powerful drug, such as digitalis, as it takes the part of an adjuvant. Cactus also acts well in some cases of angina pectoris.

Administration.—The dose of the tincture of cactus is 2 to 8 minims (0.1—0.50) and of the fluid extract 2 to 4 minims (0.1—0.25).

Untoward Effects.—It is claimed that these do not occur, and that the drug never produces a cumulative effect. —Hare's Therapeutics, Edition of 1905, page 134.

It would seem at first sight as if there was need here of some explanation, since the statements in the two extracts given are completely at variance. This, however, can easily be explained if we take a peep behind the curtain. Dr. Hare commenced to issue

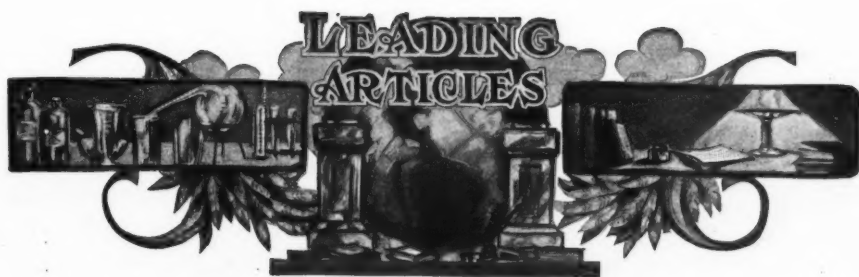
For a number of years a considerable number of practitioners have been under the impression that cactus grandiflorus possesses certain virtues as a cardiac stimulant, while others have considered that its stimulant effect is feeble, but have believed that it exercised a sedative or regulating influence upon the cardiac viscus.

Those who have been most rational in this matter have, however, never believed that cactus possessed very great power, and certain investigations which have been carried on during the last few years seem to prove pretty clearly that even a moderate degree of activity is not possessed by this drug.

—Editorial, *Therapeutic Gazette*, Nov. 15, 1907.

medical books before he had had any clinical experience whatsoever. His work therefore was simply the comprehension of other men's observations, and the excellence of the earlier editions of his books was due to the remarkable judgment shown by Dr. Hare in his selections and his ability to judge of the statements made, aided to a certain extent by the physiologic experimentation he had been engaged in, together with Prof. Wood, at the University of Pennsylvania. Each succeeding edition of his book has shown, however, the improvement resulting from his becoming more familiar with the actual practice of medicine; so that the last editions of his books are a vast improvement upon the earlier ones. In fact, I am inclined to think that Dr. Hare himself smiles when he looks over his earlier efforts in that direction. Nevertheless, the fact remains that as late as 1905 he spoke absolutely favorably, not as a quotation but in his own language, of the use of cactus as a remedy in heart diseases; while two years later, in his editorial work on *The Therapeutic Gazette*, he speaks to exactly the contrary effect. Under the circumstances one certainly has a right to ask whether Dr. Hare's latest views concerning cactus are based upon an actual trial of this drug or whether he has simply accepted the statements made by investigators like Hatcher, as he accepted the statements of other investigators in the earlier editions of his "Therapeutics."

The man who occupies the chair of Therapeutics in Jefferson Medical College will always be listened to with respect. We trust that he himself is sufficiently aware of the responsibility resting upon him to show corresponding solicitude as to the absolute accuracy of the statements he may make from that elevated position. Most assuredly he will himself be judged thereby; and if it should prove that he has rashly endorsed statements made by incompetent judges, on insufficient grounds, and has lent the weight of his influence to the dissemination of error, both he and the college with which he is connected must suffer in the estimation of the medical public.



TALKS WITH AN OLD PRECEPTOR

Being an address given at the opening exercises of
The Chicago College of Medicine and Surgery (Medical Department of Valparaiso University), September 24, 1907

By GEORGE F. BUTLER, M. D., Chicago, Illinois

Professor and Head of the Department of Therapeutics and Professor of Preventive and Clinical Medicine;
Physician to Frances E. Willard Hospital, etc.

AMONG the beautiful Berkshire Hills of Massachusetts, while the nineteenth century was yet in its infancy, there dwelt a modest lad who humbly tilled the rocky soil and faithfully herded the cattle and bleating sheep.

In the starlight of many a wintry morning he rose to the cold discomfort of the farm chores, stamping about among the shivering cattle and with benumbed fingers churning the milk into the waiting pails. In the midst of these lowly occupations a young mind was unconsciously forging weapons of habit, industry and stability which were to engrave upon the temple of fame a lasting memorial of one of the most noted physicians and medical instructors of New England.

Not far from this unpretentious farm towered the massive form of Greylock, the highest elevation in the state, overlooking the peaceful valley of the Housatonic. There was a sublimity in its noble outlines which in the youth's breast inspired an indefinable enthusiasm. To his glowing imagination it typified strength, as the lightnings shivered their flashing javelins against its rugged front; it stood for advancement, when, while the morning stars still lingered in the heavens, its lofty summit caught the

first beams of the rising sun and proudly heralded the coming day; and when some mighty mystery breathed upon it, and it became clothed in the glorious mantle of spring and the successive seasons, it spoke to him of the marvellous work of the Creator.

So, deep into the heart and fancy of that orphan boy were instilled the impressions of grandeur, beauty and love, destined to influence his life and character.

His World of Books

Soon a new and profounder world was opened to him. He found access to a few books, and the intellectual faculties were awakened, never to sleep till they had crowned his days with enduring fame. He read Locke "On the Human Understanding," Cullen's "First Lines of the Practice of Physic," "Medical Inquiries and Observations," by Benjamin Rush, and other works fortunately supplied through the kindness of an uncle, a country doctor.

It was strong food for his youthful mind, yet he assimilated it with all the ardor of which his emotional nature was capable. Still this mental pabulum was scarce in this rural section, and he was compelled to summon to his aid the inheritance derived from an intellectual ancestry to ob-

tain from his scanty reading the fullest benefit. At all events, these glimpses of a deeper life served to redeem his mind from ignorance and inspire him with a love of knowledge, and especially of medicine, which moved in him an ardent desire to achieve something worthy in the brief span allotted to his earthly career.

The foundation of his dreams had already been laid in a district school, yet, as he gazed, as if with longing inspiration upon the commanding summit of Greylock, other, more thrilling emotions stirred within him, and he thought of the great men—the philosophers, statesmen and warriors who were at that moment making history. The names of those who had risen to eminence in the medical profession came to his lips, and his heart was seized with a lofty ambition to follow their footsteps.

Night after night the lad knelt at the little window of the rafted chamber inhaling the cool, fragrant breath of the night wind, and watching with quickening pulses the stars beaming above the mountainside, as if in benediction of his hopes. Faith, resolve and courage were renewed, and only opportunity awaited the youth, that he might realize his fair ideal. As surely as the embryo within the seed, impelled by the inherent forces of nature, struggles upward to the light, so surely the unalterable decree had gone forth that this aspiring lad should emerge from darkness into the brighter day.

He Becomes a Drug Clerk

At the age of sixteen my preceptor left the narrow limits of the farm, and friendless and alone stepped bravely forth into the unknown world to win his way to fame.

Finding, by good fortune and his own indomitable energy, a druggist's clerkship in a neighboring village, he adhered to its duties for five years, in spare moments improving his mind by a diligent study of Latin, French, German and general medicine. At the age of twenty-one he entered the Medical School of Harvard University, where he was a classmate of Dr. Oliver Wendell Holmes.

His early struggles and ultimate success are a matter of history. He was ahead of his time. The discoveries made by him and the principles enunciated during a lifetime of studious practice are treasured in medical history, and amply attest the solidity of his learning and the splendid sincerity of his professional career.

During my vacation last August I visited the little city of P—, where the doctor served his early apprenticeship and where he spent the last sixteen years of his honored life, having retired from active practice at the age of seventy-three.

It was my good fortune to reside in this town when he returned to it, and to meet the good doctor almost daily in the drug-store where I was employed. He kindly consented to be my preceptor, and our cordial relations then established were continued by an extensive correspondence after I had left the East to attend Rush Medical College in the city of Chicago.

Some Interesting Letters

Being honored by a request to deliver this opening address, it occurred to me that it would be an agreeable theme and possibly of interest and profit to the medical students here assembled, freshmen and seniors alike, as well as to the laymen and older physicians, to read a few extracts from letters written to me by this revered and noted physician. For obvious reasons I shall omit names and dates, and first ask your attention to a portion of a letter in which the doctor consented to be my guide and mentor.

"MY DEAR SIR: I beg to acknowledge receipt of your recent favor in which you express a strong desire to pursue the study of medicine. I commend your zeal; yet, I must remind you, as an old and experienced practitioner, that the mere inclination to undertake so absorbing and laborious a task does not necessarily imply special aptitude for it. It would be well, therefore, to ponder seriously the many difficulties attending the experience of the conscientious physician, to whom the misery and suffering of mankind are sacred, and whose

highest aim should be to benefit humanity by alleviating misfortune.

"You remember how a certain king of Egypt wished to commemorate his achievements by building the mausoleum known as the pyramid of Cheops. The enforced labor of one hundred thousand men was required for ten years simply to construct the causeway over which the huge blocks of stone were conveyed from the quarries hundreds of miles distant. By this structure alone was it possible to transport the huge masses of granite forming the pyramids of Ghizeh.

The Value of Preparation

"This is to impress upon you the value of *preparation*, and in all departments of human labor the paramount necessity of forethought is manifest if we wish to attain the highest and most skilful results. The nation that would wage successful war must first compass every detail of military service—see that its commissariat is adequate, its armies properly equipped, and its base of supplies efficient and secure. The same need of preparation attends the successful labors of the architect, the mechanic, the engineer—in fact, of the simplest artisan. I charge you to weigh well this prerequisite to the most praiseworthy achievement.

"As regards preliminary study bearing upon the profession to which you are inclined, I may say from experience that it is unwise to emulate scholarly attainments at the expense of practical knowledge. 'Small Latin and less Greek,' and familiarity with French and German, from the literature of which so much medical learning is derived, this seems to me your safest guide. A correct acquaintance with the English language, an understanding of simple mathematics, of physics, logic, and mental philosophy, you will find useful in your professional career. These branches of study are easily mastered, so far as they relate to your future task, and now is the time to assimilate them, as the foundation of the fabric you would rear.

"In closing, I cannot but recall the philosophical adage of Horace, *festina lente*,

"hasten slowly," upon which largely depends the honorable success you emulate."

Decides to Enter Rush College

The next extract is from a reply to one of mine announcing my intention to enter the spring course of Rush Medical College.

"MY DEAR SIR: I beg to congratulate you upon your decision to enter the spring course at Rush Medical College; the best determination, in my judgment, you could have made. I doubt not you profited by my friendly suggestions touching the importance of careful preparation, and since you have wisely chosen the spring course at the College you will be well fitted to enter the regular course in autumn.

"Let me suggest to you the necessity of diligence in your college studies. You have but a few years in which to enjoy these superior advantages, and every moment devoted to your chosen task is a moment permanently gained in the acquirement of knowledge. Four years at least should be given to the regular course of study, and bear in mind that this period marks but the *foundation* of the professional attainments to which you aspire, the graduate in medicine being only prepared to enter upon a serious study of the subject, aided by the light of practical experience. Indeed, the regular course merely indicates the preliminary training which in the judgment of the faculty enables the student to pursue his studies independently.

"Bring to your task the fine enthusiasm, without which nothing good or great is ever accomplished; realize thoroughly the inestimable advantages now offered you, and to zeal add steadfastness of purpose, that no allurements may divert your thoughts from the primary object of your matriculation.

The Choice of Friends

"Cultivate the acquaintance of upright and earnest associates by whom (as, I trust and believe, by you) the present opportunities are seriously appreciated. Let your company be that of equals and superiors—never of inferiors. Your perceptions

will guide you in your selection, and you will readily discriminate between the high-minded, conscientious votary of knowledge, and the indolent, though agreeable, trifler.

"In your relations with your professors, let me caution you to be always courteous without sycophancy, dignified without undue reserve, frank and unaffected without flippancy. In particular, do not obtrude upon them nor ply them with idle questions which your own diligence and knowledge of your textbooks might easily answer. By earnestness and an unquestionable interest in your work you will soon gain their confidence and assume a place in their estimation which those who seek to curry favor by familiarity may never attain. Above all, show your practical appreciation of your teachers' worth by never shirking a quiz. Your personal recommendations will depend largely upon the sincerity of aim I have sketched, and upon the animus and expression of moral and intellectual faculties we term *character*, that is, *yourself*."

The Manner of Study

"I would counsel you especially to adopt in your studies an orderly, well-digested system, selected with care and rigidly pursued. Endeavor to realize your highest ideal of a medical student. Choose your exemplar, and remember that a model pupil almost invariably develops into a model physician, while the erratic, unsystematic one, devoid alike of method and ambition, must eventually be contented with the flotsam and jetsam of the profession. Habits of self-control will alone conduce to that intellectual activity and order which will assuredly crown your labors with success.

"Animum rege qui nisi paret imperat. Rule thy passions, which, unless they obey, command.

"Cultivate the faculty of concentration in any given line of study on any special subject. Mr. Cary says: 'We go on thinking, thinking, thinking; but how many of us make a systematic effort to so control our thoughts as to make them of value to us?'

"I shall be pleased to learn your impressions of the College, of your professors and teachers, and of your progress in the arduous labor you have undertaken. You are most fortunate in entering upon the profession at this time—an epoch in the history of medicine, when the genius of modern industry and the profound researches of medical science lend a transcendent interest to faithful study. You will have fewer things to unlearn that I had, and are embarked upon a venture which, with patience and singleness of aim, can prove only a triumphant voyage."

The First College Work

The next letter from which I quote was received two months later, and is dated May 5, 18—.

"MY DEAR SIR: The date of your letter, received last week, shows me that you have attended your college just one month. You are evidently pleased with your surroundings, and favorably impressed with the ability of Professors G. and I. You mention no other instructors, although I know there are very capable lecturers whom you must have heard if you have followed diligently the first year's course.

"Professor G. is widely known as a superior and brilliant operator; yet I observe that you are expected to study only comparative and human anatomy, histology, materia medica, general chemistry and physiology. Nothing is said of surgery and clinical work. Allow me to call your attention to the fact that Professor G. is a specialist, limiting his labors to his particular field only after years of unremitting work as a general practitioner, and a special adaptation for his present task acquired by long familiarity with dispensary, hospital, and clinical duties.

The Orderly Course of Study

"I am tempted to criticize your consistency, my dear sir, in devoting your time to more advanced studies before mastering the fundamental principles of your profession. As well try to master geometry without previous acquaintance with the

principles of mathematics. Do not attempt to climb the tree of knowledge by grasping the blossoms, but take firm hold of the branches, if you wish to rise. Remember that we must learn to stand erect before we can hope to walk or run; but you are already attempting to fly. No; your fitness for any speciality, however alluring it may seem, must first be demonstrated by success in general practice. Unless you have mastered anatomy and pathology, it is presumptuous to undertake surgery. If you cannot diagnose and treat syphilis, by what right do you aspire to comprehend the complications of nose or throat? Not that I would disparage the early, and prevalent, ambition of a freshman to excel in surgery. The desire is laudable, and there is in the heroism and brilliancy of capital operations, the renown of the operator and the impressive circumstances of the arena a fascination which no thoughtful attendant upon clinics can well resist. The scene is a living drama, the solemnity and intellectual character of which no outward accessories can enhance. The very atmosphere is surcharged with noble enthusiasm.

"Master first, however, what these great men had to master; follow patiently in their footsteps; adhere to the prescribed curriculum, and bide your time. Do not forget, above all, that what is worth doing, is worth doing well, and make thoroughness your criterion of faithful study.

"I have written to you, my dear sir, as an old friend, and quite unreservedly, trusting your confidence in the integrity of my motives and in my earnest desire to smoothe for you the early and most significant steps in the profession you have chosen. An experience of more than forty years as instructor and practitioner has confirmed me in the wisdom of the course I cordially advise, and demonstrated to my mind clearly the immense importance of a general plan of study, in full accord with the instruction indicated in your College Announcement."

Many months had elapsed ere I received the letter from which I now quote. Meanwhile, the Medical College, with its hundreds of students and many instructors,

had settled down to the eight months' work with a quiet, irresistible energy and momentum which, like the motion of the great ocean steamer, could be felt and appreciated only by those who participated in its onward course. As the mighty vessel forges ahead, its progress being marked by scarcely a perceptible tremor, yet noted by the smaller craft falling rapidly astern, so the steady movement of the college machinery brought us, unconsciously, nearer and nearer to the haven of the long vacation.

The letter above mentioned is dated December 18. After a brief allusion to other matters my former preceptor writes:

"You may think me volunteering too much advice; but the following quotation from your last letter compels a thoughtful answer. You doubtless remember writing: 'Mr. E., a senior student, who rooms with me, says that it is useless to study *materia medica* and therapeutics. He tells me to 'throw physic to the dogs,' and I don't know but he is right, for our Professor of Surgery, who gave the opening address last fall, said that we should master anatomy, pathology, bacteriology, and diagnosis—that the main thing to do is to make a correct diagnosis. *Materia medica* and therapeutics, he said, could be read up at our leisure; and, given a correct diagnosis, anyone could apply the treatment. In fact, he discourages the use of drugs, and I heard this same professor, in a clinic, assert that drugs are useless, with the possible exception of opium.'

The Importance of Therapeutics

"Now, my dear sir, with all due respect to your professor, whom you doubtless report correctly, I would ask of what possible value is your complete knowledge of all means of refined diagnosis if you are ignorant of the agents of relief? Would an intelligent employer engage as a carpenter a man who could discourse learnedly upon the principles of architecture and the tensile strength of building material, or dilate upon foundations and roof-trusses, yet who displayed a lamentable ignorance of the names and uses of his working tools

—in short, could not distinguish between an adze and a handsaw?

"But you may reply that the laity are incompetent to judge of your deficiency in this matter. Do not deceive yourself, they are the most competent to judge. Yet, even admitting that your want of comprehensive knowledge concerning the application of remedial agents may not be disclosed by poor results in your daily work, there is a simple way by which information of your weakness may reach the public ear. Your first patient, in all probability, will be a medical case. There is no opportunity to display your surgical skill by performing a laparotomy. No; the only means of communicating the knowledge you are presumed to possess is your written order on the druggist for the very remedial agents of whose properties you are deplorably ignorant, as you are of the method of constructing a correct, classical prescription.

"Eagerly the druggist scans your first directions to him, takes your measure; labels and classifies you. How long, think you, before the profession and the laity will know of your ignorance? You are already judged and by a competent tribunal; the decision is published, and years of successful practice may not serve to obliterate that first unfavorable impression of your capacity.

"Diagnosis, I admit, is absolutely necessary in order to treat disease intelligently; yet there never was a wiser, more truthful utterance regarding medicine than that of Amédée Latour, who said: 'Genuine medicine has deviated from its natural paths; it has lost its noble object, that of curing or alleviating. By thus acting it has rejected therapeutics; yet without therapeutics the physician is nothing more than a useless naturalist, passing his life in discovering, classifying, and describing human diseases. It is therapeutics which elevates and ennobles our art; it alone gives it an object; and I may add that by it alone can this art become a science.'"

There was much more in this letter of great interest to me, causing me to reflect seriously upon my studies and inclination.

But time will permit me to quote no further in this connection.

The Senior Year at Last

During my course at college many precious letters were received, the following from, which I quote, reaching me during my senior year, November 18.

"You have now fairly entered upon your last course of instruction in a medical college before taking your degree. You have, I trust, mastered the various subjects of professional study, and are now prepared to test in a practical way the knowledge you have acquired, through clinics and constant work in physical diagnosis. You are like one who has read much about London or Paris, but who has never visited these cities. You know their histories, and imagine yourself familiar with their topography; yet, should you visit either of them—known to you only through reading—and attempt to traverse their intricate thoroughfares, you would soon find yourself astray. Repeated and studious visits to them, however, would soon enable you to feel at home, and a prolonged residence create a sense of pride that you were perfectly acquainted with the ground on which you trod.

"You have perused many books, and listened to didactic lectures describing citadels of medicine; and now you are to be transported to the scene itself, and actually study its varied features, so that you may know them when you see them and realize their significance. In a word, you are to be both detective and judge. In your new and practical experience every suggestion and hint, objective or subjective symptom or sign, will be critically observed and thoughtfully considered, with the view of determining intelligently the case before you. You will now learn to study the living patient, and not the mere picture of disease as given in the textbooks. Every man, woman and child who now consults you must be examined and considered individually and wisely; and practical,—that is, clinical—study is the only avenue open to you by which to attain a working knowl-

edge of the problems presented. You will learn more perfectly how to employ the means of skilful diagnosis; the stethoscope, ophthalmoscope and microscope. You have studied, and are still studying, the *dead* evidences of disease, the pathological anatomy, as shown in the laboratory and the morgue. But, what is of more importance, you will now study the *life* evidences of disease as illustrated in the clinics.

System and Method in Practice

"As I have already cautioned you, be systematic and methodical from the start. Keep a careful record and ample notes of all cases likely to be of value to you in future practice. Make your diagnosis with deliberation, and remember that there is no such thing as an intuitive diagnosis. Your eminent teacher who appears to make one at sight has acquired this expertness, this rapidity of thought and perception, by long years of patient practice and experienced observation—like the pianist who so easily plays the most difficult classical music, an accomplishment which untiring labor has enabled him to attain.

"I would again counsel you not to slight medicine for surgery, although this latter branch of study is so fascinating and now rides upon the crest of the wave of modern science as applied to your profession. Internal medicine will have its day, medical diagnosis being as yet in its infancy, but surely developing into scientific exactitude. The examination of the stomach contents, of the blood, urine and other secretions, has become absolutely essential in arriving at a correct diagnosis; and you are doubtless aware that a microscopic analysis of the urine is indispensable in determining kidney disease; more so, indeed, than is the recognition chemically of albumin, or the discovery of clinical signs, such as edema, cachexia and cardiac hypertrophy. In fact chemical and microscopic examination of the stomach-contents have rendered the old word "dyspepsia" as meaningless and unscientific as the term "heart failure."

"While the study of bacteriology is of value and has unquestionably widened the

field of scientific investigation, let me caution you against the extreme of attributing every abnormal condition to microorganisms. Do not become a microscopic or bacteriologic monomaniac. The germs you find may sometimes be the result and not the cause of disease. Consider the effects of weakened physiological resistance, environment, heredity, autointoxication, etc. You know that the moment a part of the human system hesitates in its work, or ceases to perform its natural function, in that moment microorganisms attack it. Endeavor to broaden the scope of your researches, rather than narrow it to that of the laboratory specialist, many of whom, it has often occurred to me, resemble a locomotive: grand and powerful when following the narrow railway, but off the track a helpless, inert mass of iron.

"Do not, then, enter upon a particular line of study, as our friend, Walter E., in New York, intends to do, immediately after graduating. There should be no specialists in medicine save in departments requiring such marked dexterity of manipulation as can be acquired and retained only by extensive and constant practice. If, after years of study and reflection, your inclination, your peculiar fitness for the task or your wide experience in some chosen field of investigation warrant the attempt, then, and not till then, can you properly limit your studies to those of the specialist.

"Before engaging in active practice, I would strongly advise you to try for a hospital appointment. The position of interne in any of our large hospitals would be of incalculable service to you, by stimulating self-confidence and greatly augmenting your resources and skill. You would doubtless observe and treat more cases in Cook County Hospital in eighteen months than you are likely to see during the first five years of private practice."

A Letter From a Friend

The mutual friend mentioned in the last letter was a classmate in the College of Pharmacy, who began the study of medicine at the same time with me but entered the

College of Physicians and Surgeons, New York. It will not be inappropriate to quote from a letter received from him, dated a few days previous to that from which I have just read.

"I am sorry," he says, "that you didn't take your course here. New York is the center, you know, and our bacteriologist is 'out of sight.' We have a great laboratory, and I have become very proficient with the microscope. I 'won't do a thing' to the old doctors when I get out. I am already an expert in pathology and bacteriology, and that's what tells. I'll have the doctors running to me inside of a year to make diagnoses for them. You know we are now perfectly familiar with the etiology of diphtheria. It's the Klebs-Loeffler bacillus. Did you ever see one? I don't suppose the Chicago men are 'on to it' yet. I can tell one now the moment I find it. You see there's no use of being scared over a child with membranous sore throat unless you find the bacillus. I tell you, Butler, you made a big mistake in not coming here. Your Chicago men have no reputation. Now, every one knows Thomas. I am one of his assistants, and am going to make diseases of women a specialty. I intend to locate in our old town of P— and take up gynecology. The doctors there don't know anything about that. Our old friend Dr. B. is the best man there, but he doesn't practise, and is a 'back number' anyhow. I don't suppose there was ever a laparotomy done in the town, and there must be lots of such work to do. I'll show them a 'trick or two,' and will have the business inside of two years. Women are the people to bring you business. Well, old boy, I must close. I have a date to assist in an ovariectomy. Write soon.—Walter."

Enters the Profession at Last

I will quote but once more from my preceptor, the following extract being from a letter received just after I was graduated.

"MY YOUNG FRIEND: You have now entered the noblest profession. It is not a trade; it is the alleviation of human suf-

fering and the pursuit of science for its own sake. Keep alive in your thoughts and daily life the sacred flame of professional and scientific ardor, and you will be warmed and cheered amid reverses, calumny, and disappointment.

"The life of a physician is larger than his profession. He is the center of influence; he touches society in many ways; comes into intimate and confidential relationship with families and communities; and has to deal with questions affecting the public welfare—health, education, temperance, purity—and in every event should be a worthy example to his fellow men and an unfailing power for good.

The Country versus the City

"You speak of the difficulty of selecting a location. Do not, I pray you, despise the *country* or the country practitioner. Cities are already overcrowded with physicians, and the demand for young doctors is very limited. You will have more practice in rural districts at first, and in practice there is growth, indeed, you cannot grow without it. Remember that the working physician is the thinking physician. Moreover, in the country the diligent practitioner has a much wider range of experience, his varied duties embracing almost every branch of medicine. The earnest physician in the country is constantly pushing to the front in every community where his services are in demand. He must rely upon himself and be master of the most delicate and perplexing situations, assuming responsibilities hitherto unknown to him, guiding, directing and counselling in obedience to the behest of personal conscience, whereas the young man who locates in the city generally relies upon the assistance of other practitioners. The country doctor must fearlessly confront whatever accident or disease may bring to his door and at the same time be a tower of strength to the feeble and timid. Thus any moment of his practice may demand qualities of the highest order: courage to face death; coolness and self-possession to encounter danger; capacity to meet every

emergency; and strength of mind and body to endure to the end.

"From the ranks of the country doctors medical science has recruited many of the ablest men who ever honored and graced our profession—such men as Marion Sims, McDowell, Edmund Peaslee, and the elder Gross, as well as hosts of others whose studious habits and resolute industry rapidly elevated them to a prominent place in the esteem of their fellows.

"In conclusion, let me repeat that, above its material aspect, you have selected a truly benevolent profession—you have chosen to walk on the gentle, the sympathetic and suffering side of life. Doubt not, my dear sir, that your labors will be richly rewarded, even with tangible emolument, and that there will come to you peace of mind, comfort and the serenity derived from the consciousness of doing good. Yet, whatever vicissitudes attend your career, make yourself worthy of your exalted profession, taking this to your heart as an inspiring motto:

"I may not triumph in success,
Despite my earnest labor;
I may not grasp results that bless
The efforts of my neighbor;
Yet, though my goal I never see,
This thought shall always dwell with me—
I will be worthy of it!"

Ladies and Gentlemen, I am well aware that, measured by its value, this address is already too long; yet I will ask your indulgence a moment more, while I conclude by reading a short extract from a letter received from my friend Walter, who has now been in active practice for some years in the little city where my beloved preceptor lived.

"MY DEAR DOCTOR: It is my sad duty to inform you of the death, on the morning of July 5, of our mutual friend and your preceptor, Dr. B. He appeared to be in as vigorous health as ever until he learned of the death of his esteemed friend and classmate, Dr. Oliver Wendell Holmes, when he began to fail, being confined to his bed and finally sinking away under the shock to his nervous system occasioned by that melancholy announcement.

"I may truly say that I have known no man more lovable or more universally

beloved than our departed friend. In deference to his illness the usual Fourth of July celebration was entirely abandoned, and even children passing the house moved quietly and reverently inquired as to his condition, while the medical students and practitioners of the city, regardless of sect or academic duties, attended his funeral in a body and passed touching and beautiful resolutions regarding the deceased.

"For myself, I wish to say now what I often have been tempted to confess to you, that I sincerely regret the presumptuous, and shallow statements uttered during my attendance at college and my first year of practice concerning the ability of that good and wise man. He was the best friend I ever had, and one of the broadest-minded men I ever knew. He was, moreover, the sincerest friend and most valued counsellor of every physician here; and, though he had long since retired from active practice, his profound interest in his profession kept him fully abreast of the times. He had in the course of his wide experience carefully studied the vibrations of medical thought and progress, and, having seen the pendulum swing from one extreme to the other, had, as it were, carefully pursued his course between Scylla and Charybdis. Ever ready to accord to us the inestimable benefit of his counsel, we could not but profit by his honored advice. His diagnoses were remarkably lucid, conscientious and profound, and we quickly learned the folly of disparaging the attainments of the old and experienced practitioner in favor of the superficial manner in which many of the younger aspirants had been schooled.

A Mistaken Diagnosis

"I shall never forget my first year of practice, when, imbued with the recollection of college clinics, I was ambitious to shine in surgery, although there was little opportunity to follow this branch of my profession. I had a patient who, I believed in my callow ignorance, was suffering from an ovarian cyst, and had agreed to operate for this malady on a certain morning at nine o'clock. The evening previous, at

about 10 o'clock, the good doctor, in a blinding snow-storm, called to see me expressly, and in a most kindly and considerate manner stated that he had just heard of the intended operation and strongly advised me to reconsider my diagnosis, bringing my microscopic knowledge to bear upon the case, saying in conclusion that he had been consulted by this very patient some time before and after a careful examination had diagnosed the malady as splenic myelogenous leukemia. The doctor was to leave town for Boston next morning on the 4 o'clock train, and had wished to spare me, if possible, the humiliation of a most serious error in professional practice, having braved the elements in my behalf. His urbane manner and his strong presentation of the case precluded all thought of offense on my part, and I was deeply impressed with the consciousness of possibly egregious ignorance in my examinations. I need hardly say that I was heartily ashamed of myself in finding that the doctor's diagnosis was perfectly correct, and his aid in releasing me from what might have proved a very awkward predicament and probably fatal results, filled me with gratitude and admiration. It was a salutary lesson to me; and I may add, that my anticipation of important surgical work has never been fully realized. I have enjoyed a most lucrative and interesting practice, yet the proportion of medical to surgical cases under my care has been as fifty to one.

"Verily, confession is good for the soul, and I must further shrive my conscience

of some exceedingly crude, not to say uncivil, remarks made in earlier days regarding your Chicago physicians. I am now well aware how medical literature has been enriched by the writings of Chicago men; indeed, there are members of your faculty, whom I have met at the meetings of the American Medical Association, whose articles upon medicine and surgery I consider equal, if not superior, to those of any members of the profession in this country. With all my love for New York and my alma mater, I firmly believe that Chicago will eventually be the medical center of the United States—perhaps within the next decade. I therefore congratulate you on being identified with the profession in that city, and especially upon your connection with your medical college, which has done so much to elevate the standard of medical education.

"Your preceptor and my friend was, as you know, an earnest advocate of the higher, broader instruction, his liberality and scope marking the ideal physician. Would to heaven there were more such! He has had his reward in the veneration of the public he served so tenderly and faithfully; and I know of no simpler, more eloquent tribute to the memory of man's worth and honor than the inscription chosen for the monument which is to record the love and appreciation of his fellow townsmen: 'In recognition of his kindness of heart, his unvarying sympathy with human suffering, and his signal virtues, a grateful and appreciative people erects this votive stone.'"

ON THE WAY

Plant the seeds of kindness where you pass along,
Keep the note of courage always in your song;
Though the fates may drive you onward day by day,
Spread the cheerful gospel as you go your way.
Plant the seeds of friendship everywhere you go,
In the days that follow they will grow and grow;
Preach the creed of good will all along the way,
You may be returning from defeat some day.

—S. E. Kiser

SPECIFIC MEDICATION AND THE ALKALOIDS

The recognition of specific indications for the use of remedies, or specific diagnosis, and how we may make these "indications" practically useful in the treatment of disease, or specific medication

By JOHN BENSON, M. D., Colfax, Washington

IN the early days of the settlement of this part of the State of Washington, every fall of the year we would have a recurrence of isolated cases of a hybrid fever, known to the laity as mountain fever, but more generally termed by the profession, typhomalarial fever. It lacked the clear-cut features of either typhoid or malaria, but seemed to be a blend of the two, having the appearance of a malarial fever of a low adynamic type. I am aware that some of our eastern wiseacres deny that there is such a disease as typhomalarial fever, but seeing, treating and having is believing.

The "Blessings" of Eastern Immigration

But when eastern immigration began its flow into the state, the settlers brought with them in their train most of the benefits and blessings of their effete civilization, including scarlet-fever, diphtheria and true typhoid. Our towns became more populous, our open grazing country more thickly settled and cultivated, and as the soil was more thoroughly drained and tilled, it also became more polluted and typhoid replaced typhomalarial, until at present it is as rare to find a case of the latter as it was then to find the former.

Soon after harvest begins typhoid fever as a rule makes its appearance. The prolonged hours of strenuous labor, often fifteen or sixteen a day, accompanied by a harvester's appetite, requiring four or five meals daily, the ingestion of large quantities of food, into an organism constantly physically wearied and incapable of elaborating the proper digestive processes, the copious drinking of water from wells and springs that are well-nigh dry from the summer heat and too often receptacles for

the drainage of house and barn, all combined lessen the vitality and resistance of the organism of disease and allow them to fall easy victims to whatever infection may be abroad.

To illustrate the point of my article in the December number of CLINICAL MEDICINE on "Color in Therapeutics," I wish here to give two cases taken from my case-book, whose histories are typical of many others. It is seldom such clear-cut indications for remedies are seen. But on that account they all the more indicate the line of treatment.

Two Interesting Cases

They were both young men, twenty and twenty-two years of age, genuine farmer boys, strong, healthy and robust. Excellent family histories. Both had just put in a month to six weeks of most laborious work in the harvest field. Both were exposed to the same surroundings and conditions. For about a week they had been feeling weak and miserable, without knowing why, until fever appeared, when they went to their homes, and when seen they presented the following symptoms in common:

- Both in bed.
- Had fever eight or ten days.
- Face flushed.
- Heavy, sodden appearance.
- Complain of dull, heavy headache.
- Intelligence dulled.
- Answer questions slowly.
- Low muttering delirium at night.
- Tongue dry and coated.
- Sordes on lips and teeth.
- Bowels bloated, tense and tympanitic.
- Gurgling on pressure, especially in right iliac region.

General tenderness over abdomen.

A few rose-colored spots on abdomen.

Urine scanty, high-colored, offensive.

Stools, three or four a day, thin, watery and offensive.

Morning temperature, 101.5° F. to 102° F.

Evening temperature, 103.5° to 104° F.

Upon the totality of these symptoms we can safely make a diagnosis of typhoid fever, and as safely prescribe for the same. But, shall we prescribe for the disease or shall we prescribe for the individual affected with the disease? While the main characteristics of typhoid are the same in all cases, yet the individuality of the person is often an important factor in the case and the same symptoms may have different manifestations in different persons. I have always made it a rule to study the personal idiosyncrasy of every patient, so here let us make a still closer examination of these cases, and see what further symptoms can be elicited by careful questioning and observation, to assist us further in our individual diagnosis and medication.

Peculiarities of John Doe's Case

We will begin with John Doe, aged twenty:

Lies quietly in bed.

Seems averse to moving.

Irritable and cross when aroused.

Wants to be let alone.

Delirium, is always working at his last occupation.

Face appears hot and puffy.

Circumscribed red spot on right cheek.

Tongue dry, pale, with whitish-yellow coat.

Breath offensive.

Pulse full and hard.

Slight dry cough with stitching pains in right chest.

Slight dulness on percussion over right posterior thoracic region.

Few moist coarse râles in same region.

Occasional stitching pains in abdomen.

Stools about three a day, thin, bilious-looking, offensive.

Complains of burning at anus.

Urine scanty, brownish-yellow in color.

And Now for Richard Roe

This one is Richard Roe, aged 22:

Appears in a semicomatose condition.

Falls asleep while answering questions.

Changes his position frequently.

Complains of the bed being so hard.

Delirium, cannot rest for he imagines his body to be broken into pieces, and he cannot get them together.

Marked debility and prostration.

Body slides down in bed.

Face is a dusky, purplish red.

Has a besotted appearance.

Tongue dry, brown, coat in center.

Edges of tongue red and shiny.

Breath very offensive.

Pulse soft and compressible.

Stools about four a day, thin, dark and horribly offensive.

Here, then, we have three distinct sets of symptoms. One set that is common to both patients, and that is characteristic of the disease; one set that is peculiarly those of John Doe alone, and another set especially symptomatic of Richard Roe. It would be wrong to treat those men with the same drugs, for although it is one and the same disease in both, yet each one has symptoms peculiarly his own, and no one else's; and although the history of the cases tells us that they are in about the same stage of the disease, yet, otherwise, they are markedly different.

In John Doe, we find the system making a noble resistance to the disease. His strength and vitality are good. He is irritable and cross, and that is one of the best of signs, for irritability of temper always shows a reserve fund of strength to work on. Besides the typhoid symptoms, we find a slight bronchitis of the right side, as shown by slight cough and stitching pains, and involvement of the liver, as shown by the bilious stools and burning at anus. The pale tongue and whitish coat show that as yet the system has not become profoundly saturated by the septic invasion, and that under proper medication and with no new complications we might expect an uneventful recovery.

So for John Doe we will prescribe the sulphite of sodium, 10 to 20 grains in a glass of water, to render it pleasantly alkaline, and administer it *ad libitum*. In addition we will give one granule of bryonin, gr. 1-67 every hour until effect is noticed and then less often. Also emetine, gr. 1-67, one granule every four hours, to loosen up the pulmonary secretions and relieve the congestion.

With Richard Roe we have an entirely different case to deal with. Here we find the system most profoundly overcome with the septic infection, as evinced in the marked prostration, the low delirium, the dark, purplish color of skin and mucous membranes, the weak heart, and the intense fetor of breath and sweat, urine and stools. It is putrescence itself. It shows that the blood and the tissues themselves are disintegrating under the septic influence. Hemorrhages, nasal and rectal, may be expected any moment, and if we are to save our patient we must prescribe promptly and rightly. What are the two great remedies for putrescence? Hydrochloric acid and baptisin. So to the drinking water of Richard Roe we will add a few drops of hydrochloric acid, just sufficient for a pleasant acid drink, and given freely. Also we will give a granule of baptisin, gr. 1-12 every hour until effect and then less often, also a granule of strychnine arsenate, gr. 1-134 every three hours, to support the flagging heart.

In the first case, the remedies relied upon were sodium sulphite and bryonin. In the second case, hydrochloric acid and baptisin with strychnine arsenate as an adjunct. Why? Why were these remedies given instead of any one of perhaps twenty other remedies that might have been prescribed with advantage?

The sodium sulphite was given because wherever a pallid mucous membrane and a tongue coated with a whitish or yellowish white deposit be found, there is a call for alkalis in the system. Sodium sulphite supplied this demand and being also one of the best of antiseptics it corrects the decomposition going on in the digestive tract.

If the same conditions existed without sepsis the sodium bicarbonate would be the proper alkali to use, or if there were extreme fetidity, as in diphtheria, typhoid and like diseases, the potassium chlorate should be used. We will also use in the case of John Doe a liberal amount of sodium chloride (common salt) in his food, as supplying an often-overlooked want.

The Sulphocarbolates Useful

The sulphocarbolates might have been given with equal advantage in this case, for my experience has proved to me that the sulphocarbolates can be given with greater results and benefit in those cases where a demand for alkalis exists than in those cases where an acid is indicated. Bryonin was given because it was more closely indicated than any other remedy. It is especially called for in sthenic cases where the inflammation is acute or subacute. It has a special affinity for the right side, right lung, liver, and above all others for the serous membranes, whenever the characteristic sharp, stitching pains are found. The peculiar irritable mentality, the aversion to motion, the dry cough, the complication of the right lung, the right flushed cheek, the bilious stools, all called so plainly for bryonin that it seems as if it could not possibly be overlooked.

With Richard Roe we have a much graver condition. The sepsis is so great that here we have a decomposition of the tissues and blood. Putrescence exists, and with the red tongue it calls for hydrochloric acid. It is indicated by the red tongue, the very offensive odors, the evidences of decomposition and the extreme prostration. Being also the free acid of the gastric secretions, it will aid in the processes of digestion. We shall also advise the liberal drinking of buttermilk, on account of the lactic acid present, which makes a pleasant and agreeable beverage and one that is eagerly accepted by the patient. The hydrochloric acid alone might possibly have been all sufficient for this case, had not the peculiar mentality calling for baptisin been so prominently shown.

Baptisin is preeminently one of the greatest remedies for putrefaction. Given its peculiar mental symptoms, as shown in this case, the great prostration, the foul odors of all excretions, the dusky purplish color of face and mucous membranes, and baptisin can be given with the firm reliance that it will do all that a remedy can possibly do. If the characteristic mental symptoms of baptisin had not shown in this case, I would probably have prescribed echinacea or *echafolta* in its place.

To make a long story short, lysis took place with John Doe on the sixteenth day and with Richard Roe on the eighteenth day. Both had an uneventful recovery.

Now as to the value of mental symptoms in controlling the selection of remedies in disease, I can see a pitying smile upon the faces of some of my readers at the absurdity of the thing, but let them smile and—learn. I, too, used to give my superior, commiserating smile at the fatuous intelligence that could believe it a fact, and although not from Missouri, I had to be “shown,” yea, not once, but many and many a time, ere I would believe.

Now, the mental symptoms are the most valuable in the selection of the right remedy, and often where two or more remedies are apparently equally indicated in a case, the mentality will cast the deciding vote. For years they have been to me like the Sunday-school boy's definition of a lie, “A precious ever-present help in time of need.”

Lastly, a word on polypharmacy. Years ago I was called to succeed another physician in a case of typhoid. The patient was a girl about fourteen or fifteen years of age, at about the twentieth day of the disease. As I sat at her bedside after my examination, I observed a stand near by covered with bottles. There were fifty-one of them, ranging from one ounce to eight ounces in size. Some were empty, some a quarter full, some half full, some three-quarters full and some lacked a few teaspoonfuls of being full. Here, in less than three weeks, this aggregation of polypharmaceutical prescriptions had been poured down the throat of this unfortunate child. Can you wonder

that she did not improve as she should, or that the parents desired a change of physicians? Needless to say the stand was cleared, a clean white cover placed upon it, on which rested a small saucer with a few of my granules and tablets, which looked absurdly inadequate to the occasion after the formidable array before present.

The child got well.

I have seen many cases of polypharmacy, but this was the worst of all and wherever found it proved to me one of three things: The physician had no confidence in his diagnosis of the pathological conditions, or he had no confidence in his knowledge of the drugs required, or of their action. So he wandered, day after day, from one prescription to another, ever groping in the dark, and ever hoping that out of so many, at least one missile would hit the mark.

It is seldom that one hour or several hours will make any material difference in the recovery of the patient. Take time to study the sick one, examine him from head to foot, know the conditions of every organ, of every gland, and do not leave him until a thorough knowledge of his pathological conditions is obtained. Then take time to go over the drugs applicable to this condition, and select the most appropriate. Better a thorough working knowledge of twenty remedies than a smattering of two hundred. Know what each one will do and give fearlessly. Outline your course of treatment for the case and stick to it. Do not let every little passing ache or whim of the patient call for a new prescription, as long as the general condition is unchanged. Know what to expect of the remedy and give time for its action.

Be a compass ever pointing to the right, not a weather-vane fluttering to every breeze.

[Splendid! This article is crowded full of practical wisdom. If every doctor in America would read this article thoughtfully and at least *try* to put Dr. Benson's principles into practice, whether he adopted his methods or not, he could not fail to be a better doctor.—ED.]

THE TREATMENT OF RHEUMATISM

What rheumatism is, the old way of treating it with the salicylates, what was really accomplished by this method, and the means which the author has found most satisfactory

By WILLIAM F. WAUGH, A. M., M. D., Chicago, Illinois

WHEN the writer commenced the practice of medicine, the textbooks of that early day stated [that] while cathartics had been recommended as useful remedies for rheumatism, yet the pain and suffering caused by the necessary movements of the patient more than overbalanced any benefit that might be derived from them. One of my earliest clinical experiences was proving the falsity of this statement, by actual trial. In every case I found that the benefit from the action of the cathartics far overbalanced the pain and annoyance suffered by the patient in consequence of the movements necessitated.

When cascara was first exploited one of the claims made in its behalf was a specific value as a remedy for rheumatism. This, however, was abandoned after extended clinical trial, and the parties most interested in the introduction of this remedy stated that there was no greater benefit to be expected from cascara than from any other similarly acting cathartic. This was true. They neglected, however, the opportunity to impress upon the profession the great benefit that all cathartics afforded in rheumatism.

What is Rheumatism?

Let us go back here for a moment to discuss a question, of the utmost importance in the discussion of rheumatism, and which should have come first in this article, and that is, What is rheumatism? Clinical observers are by no means agreed upon this point, and it will be found that comparatively few limit the definition "rheumatism" to its proper line of cases. With the laity almost "anything that hurts" may be called rheumatism, and with many of the profession a similar laxity or lack of precision in statement is altogether too common. We therefore find

that under the definition "rheumatism" are frequently included cases of neuralgia, neuritis, myalgia, spinal irritation, fracture or dislocation of bones, and other traumatisms. and especially those numerous erratic, ill-defined pains, which Haig attributed to uric acid, and which the modern clinician more correctly ascribes to autotoxemia.

Gould defines rheumatism, or rheumatic fever, as a disease characterized by severe, fitful, and shifting lancinating pains in the joints and in the muscles, and inflammatory swelling of the affected parts. An older definition was: an inflammatory disease of the structures about the joints, always attended with fever, tending to shift from one joint to another, and accompanied with a disposition to acid perspiration. This is a good definition. It is difficult to see what else could be included by it besides true rheumatism.

Limiting our consideration, therefore, to the true rheumatic fever, we may say that the physician may practice a long time before he meets a single case in which there is not disorder of the digestion, with acid fermentation in the stomach or the intestines. This being the case, we can readily understand why any cathartic which is administered is curative. We shall not be surprised, moreover, to find many persons holding to the hypothesis that rheumatism is due to an acid generated in the intestines or stomach, absorbed into the blood, and acting upon the points of lowest resistance by coming actually in contact with the weaker cells, through the medium of the circulation. The natural corollary follows that since constipation and the retention of fecal matter in the intestines increase the disposition to fermentation, because they offer greater opportunities for microorganisms to increase

and multiply and carry on their operations, the evacuation of the alimentary canal is one of the principal points in the treatment.

Rheumatic Remedies.—Intestinal Antiseptics

This hypothesis is further strengthened by the fact that every remedy that has been advocated as useful in rheumatism possesses the properties of an intestinal antiseptic. We would especially here call attention to the value of such antiseptics as salol, quinine, salicylic acid, and the numberless variations from the salicyl radicle. Each of these have proven useful in rheumatism, each is an intestinal antiseptic of no mean value. One other remedy which has been found useful in rheumatism is resorcin, and this also is an effective intestinal antiseptic. There seems to be more than coincidence in these facts.

We are not arguing for the absolute truth of this theory; in fact, as is our custom in dealing with clinical matters, we simply accept it tentatively as a convenient working hypothesis, and base upon it our therapeutics. Our line of procedure in rheumatism is as follows:

We commence by emptying the alimentary canal. The usual method is to administer a grain of calomel in divided doses, followed by repeated potions of some saline laxative, whichever may be preferred by the physician. This is continued until the bowels are absolutely emptied. It may require colonic flushing to supplement the action of the remedies taken into the stomach. When this has been accomplished the acidity remains, and for this we proceed to give our intestinal antiseptic. When the salicylates were first administered, salicylic acid was given in doses of two drams; this quantity was placed in a pitcher, and an equal or larger quantity of sodium bicarbonate or borate added, with water. The salicylate of sodium was formed, with effervescence. When this was completed the entire quantity was given in six doses, two hours apart. It was rare that the most acute case of inflammatory rheumatism resisted this treatment; if it did, the same dose was repeated the next day.

To appreciate the full value of the salicylic treatment one has to be placed in the follow-

ing condition: I was treating a patient for rheumatism, had been treating him for several days, with such results that one morning the patient informed me he would give me one day longer, when if I failed substantially to relieve him, he would employ another physician. The circumstances of the case were such as to resemble closely the celebrated "ground-hog" case—I simply *had* to relieve that man. I had a family to support, and had nothing to depend on excepting my practice. Accordingly I went to my office, got down my books, and somewhere came upon the suggestion of salicylic acid. I secured the dose above mentioned, took it to the patient's house, made it up for him, and left him with instructions to take it as above advised. The patient at that time was so badly affected that actually, when I called upon him the next day, I looked anxiously at first to see if crape were hanging on the door. It was not, and I summoned courage to open the door and walk into the room. The patient, who had been stretched upon a bed of agony the preceding day, unable to move anything but his tongue, was sitting before the fire, with his feet propped up on a stool, reading a paper and smoking a cigar! The other physician did not get a chance at that case.

The Preparations of Salicylic Acid

In due course of time we learned that sodium salicylate did not have to be prepared extemporaneously; next, that there was a difference between the ordinary pink commercial salt of synthetic manufacture and the natural salicylic acid prepared from the oil of wintergreen; also there appeared in due time a chemically pure salicylic acid, and its salts which materially increased the usefulness and lessened the disagreeable and dangerous features of salicylic medication. Aspirin and a host of other derivatives from the primary article appeared, and each of these proved of value in some cases where the commoner forms of this medicine did not prove applicable.

One of the later observations made clinically by the writer, however, seems to him of especial interest. It is this: The effect

of a single dose of salicylic acid, or any of its derivatives, is comparatively limited in time, no matter how large the dose may be. Give 20 to 30 grains of sodium salicylate or salicylic acid to a patient with whom gastric acidity is marked, and this acidity will be effectually quelled for the time, but in half an hour it will reappear. Possibly the effect of the salicylic acid is not so much that of reducing the fever and other inflammatory symptoms, by the simple bulk of the dose, as it is due to its action in checking for the time the gastric fermentation. If this be the case, the doses should be multiplied; and it is not necessary to give at a single dose more of the acid than is sufficient to check fermentation. Accordingly the writer tried the following experiment: Taking the chemically pure salicylic acid, he administered this in doses of 1-6 of a grain; these being given every five to fifteen minutes, according to the severity of the case. The object was that there should at all times be present in the stomach enough of the acid to prevent fermentation.

Unfortunately, from the pressure of other lines of other work, which has taken the writer out of the turmoil of general practice, his opportunities for personal observation have not been nearly so frequent as he would like. Nevertheless, in the few cases in which he has had an opportunity to put this method to the test, it has in every instance proven successful; and he has, in this manner, obtained from two or three grains of salicylic acid in twenty-four hours as satisfactory results as were previously obtained from many times larger doses. The general experience of a number of years of clinical observation has all gone to confirm the correctness of that view of the matter which he has taken as a working hypothesis.

My Way of Treating the Disease

Clear the bowels completely, give salicylic acid, or salol, or whatever antiseptic you prefer, in doses just large enough to keep the stomach free from fermentation and the consequent acidity. Give these doses so frequently that the fermentation will never have an opportunity to recommence, and keep

this up until the malady has come to an end. There is not much to add to this.

As for local applications, the best are probably such as protect the inflamed parts from pain-inducing contact. Carded wool or absorbent cotton, saturated with a solution of salicylic acid, is probably of considerable value; possibly a solution of sodium carbonate is equally useful.

When the disease seems to settle in a single joint, showing that its structures have been impaired by the inflammation, I have often found it of value to cover the joint with a cap of pure-wool flannel, saturating this with codliver oil, to which a certain proportion of oil of wintergreen may be added; then covering this with a cap of oiled silk, keeping this in position as long as may be necessary, simply adding a little more of the oil each day to compensate what is lost or absorbed.

After the attack has passed, I firmly believe that prophylaxis lies in attention to the alimentary canal, far more than to the wearing of wool and the resort to a supposedly suitable climate.

The Best Antipyretic Remedy

Unless the gastric irritation is great, the best antipyretic remedy in acute inflammatory rheumatism is undoubtedly veratrine. Of this, very small doses, each gr. 1-134, may be administered, well diluted, and repeated every one to four hours according to the fulness and tension of the pulse. If the stomach is too irritable for veratrine, aconitine may be substituted in similar doses. But if we sometimes see delirium a prominent manifestation, a better remedy than either of these is to be found in gelseminine, of which from 1-250 to 1-100 of a grain may be administered in similar manner every one to four hours. These three remedies relax vascular tension and promote elimination; veratrine being the most powerful as an eliminant, gelseminine the most valuable in preventing delirium; aconitine preferable when an irritable stomach is present. In the small doses recommended neither of these remedies is especially depressing; in fact it may be held, and is held, stoutly by many who are familiar with them, that these small

doses actually increase the vital resistance instead of decreasing it. But if cardiac feebleness be a feature, we may resort to digitalin, or even to strychnine, or to both, in conjunction with the antipyretics mentioned, giving enough of either to bring up the force of the heart to the point which we desire, and sustaining it there.

The best means of preventing secondary inflammatory implication of the heart or pericardium is to put a stop to acute rheumatic affections as quickly as possible; and if the above treatment has been carried out intelligently, we shall not have to recur to Fuller's alkaline treatment for that purpose. If, however, there be reason to infer that some inflammatory deposit has taken place about the heart, as shown by the murmurs remaining after the acute rheumatism has subsided, I believe it is wise to put the patient for a prolonged period upon an active absorbent medication. The best remedies here I firmly believe to be the iodide of arsenic. As an iodine preparation, this is probably the most effective form of this element employed in medical practice. Arsenic, also, by its specific power of inducing fatty degeneration, tends to act upon the newly formed adventitious tissues, more powerfully than upon the permanent structures of the human body, whose resisting power is greater. We therefore aim to give as much of the arsenic iodide as we possibly can, without reaching a dose which will exert a destructive effect upon the normal cells of the body. Give one milligram (gr. 1-67) of arsenic iodide, every two to four hours until irritation of the eyelids shows the beginning of toxic action. This is the safest preparation to use, for both the arsenic and the iodine act in causing ocular irritation. When this symptom presents itself, lessen the dose until it ceases, and keep on with the administration of the remedy. This may be given with advantage for a

period of from three to six months, or until all evidence of the disease has disappeared.

In Cases of Anemia

If anemia should be present, as it frequently is in the younger cases who are subject to the more severe forms of this inflammatory malady, the arsenate of iron may be added to the foregoing with advantage, or the iodide of iron may be employed. We have in this combination an excellent means of inducing two apparently antagonistic actions at the same time; for the iodine acts effectively in melting down and carrying off the morbid products of the disease, while the iron is at the same time increasing the store of hemoglobin and the number of red blood-corpuscles.

I have not said a word about the serums, or about the specific microorganisms causing rheumatism. Beside the brilliant scientific investigations of such matters, the view I have here presented will appear to be homely and old-fashioned in the extreme. It has, however, the merit of being applicable by every one of us, and of proving satisfactory when applied in actual practice. Moreover it has behind it the testimonies of the ages; and it is unfortunately the case with too many of our recent medical theories that when put to the test of actual practice in the clinical field they fail to work satisfactorily. I am not speaking to discourage investigation along these other lines; but when a physician is attending a case of acute inflammatory rheumatism in its more aggravated forms, especially as occurring in the very young, what is wanted by both patient and physician is the speediest relief that can be given, and not the "showing off" of scientific theorizing. The method of treatment I have laid down will afford this relief.



SOME HYGIENIC PARADOXES

Rational and irrational notions which persist in the profession concerning diet, exercise, fresh air, humidity, mental activity, recreation and other matters of hygienic importance

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IN diagnosis, in the management of obstetric, surgical and medical cases, even in the administration of drugs, the young practitioner very soon has borne in upon him the fallacy of rules and the need of attending to the individual case and checking expected results by actual occurrences. Partly because hygiene is conceived of as applied physiology, but largely because it is usually taught in schools and applied in practice only in very general terms, we are not so fully on our guard to detect the need of varying from set rules, while the less immediate results of hygienic, as contrasted with medicinal or mechanic treatment, prevent the recognition of cases in which our dosage of hygienic measures has been excessive or deficient or in which idiosyncratic effects have been produced or in which, for various reasons, it is advisable to discard a rule for an exception.

Our Notions Concerning Diet

A great many of our notions concerning diet—and by “notions” is meant not only lay conceptions but those carried out by physicians of considerable general skill—are really not hygienic rules at all; that is to say, they are not applied physiology in any sense of the word, but are survivals of empiricism and, so far from being supported by any tenable physiologic theory, whatever apparent support they have in practice is due to the very considerable power of the organism to bear starvation and abuse. In some cases they are direct violations of common sense and arithmetic. For instance, the faith that a patient can be nourished on three or four eggs or a quart of meat extract a day is precisely as childlike as when our little ones go into a

fashionable restaurant and try to buy a dish of ice-cream for a penny. Again and again the patient gets well, but, then, a kindly proprietor may actually let the child have the ice-cream. In other instances the child wants to play instead of getting his lesson, so, instead of figuring out a lot of tiresome percentages and adding them up, he puts down a number at random. How many times do we do exactly the same thing when it comes to proteid, carbohydrate and fat in various food-stuffs!

But there really do exist hygienic rules of diet, and there is scarcely another branch of medical art in which scientific facts and processes can be applied in so exact a way, arithmetically, and with so little necessity for allowing for errors that cannot themselves be formulated. Yet, however satisfactory an accurately calculated diet is, as a general rule there are numerous cases in which we must discard all theory and meet the cravings of the individual case. Two points must indeed always be borne in mind, and usually as supplemental to, rather than at variance with, dietetic theory: namely, to administer the ration in proper variety in ordinary culinary instead of sick-room food-stuffs, and to select foods that appeal to the appetite of the patient.

Rational and Irrational Exercise

This is a matter in which the chief therapeutic mistake is in regard to overdose and incompetent filling of prescription. As a rule, any necessary work to which a person is habituated from early life is wholesome and safe, so far as mere muscular strain is concerned, though it may subject the worker to accidental traumatism, including hernia, and so forth, due to unusual and

unexpected strain, to various exposures not directly concerned with the muscular effort itself, and it may produce asymmetric muscular development and even skeletal deformity.

Athletic sports are especially dangerous, for the simple reason that the standard is the maximum one of human achievement or, at least, measurably in excess of that of a competitor, instead of the safe and beneficial standard of the particular individual. Traumatism and the direct results of overstrain, the latter particularly manifested in the cardiovascular system, need only be mentioned. We may also recur to the subject of diet to note the fact that, in training, athletes are especially prone to follow the false notion that one can accumulate strength from an excess of food as one can accumulate financial wealth from an excessive intake of money. However, the studies of Chittenden, Atwater, Benedict, Fisher and many others have already demonstrated the fallacy of the time-honored training diet and the very direct connection of athletics with universities insures a reasonably prompt application of this knowledge.

Disproportionate Muscular Development

A very important, by no means newly discovered, and still generally ignored danger of athletics is the development of a set of muscles, including the heart, and a habit of anabolism and catabolism out of all proportion to the probable demands of the individual in his after-life. If we think of athletics as a vocation, it is almost unique in its brevity. Anson was familiarly known as "Pop," in allusion to his years, considerably before he was forty. The college athlete usually enters professional or sedentary business life long before he is thirty, and even the professional athlete seldom follows athletics as a vocation much after the age of thirty. Disregarding the occasional demonstration of well-marked cardiac lesions, such as valvular defects and dilation or aneurisms and the like, the ex-athlete has, as a rule, muscles, heart, respiratory capacity, appetite and corresponding hepatic, renal and other glandular activities far in excess

of his daily needs. To keep up his physiologic standards is economically wasteful, often practically impossible. Readjustment, implying atrophy, is inevitable and the badly balanced organism suffers in various ways. If the habits of hearty eating persist, we have the liability to all sorts of intoxications, arising directly from intestinal putrefaction or even gastric stagnation and fermentation, or more remotely from more recondite metabolic processes. Gout, in one of its less typic forms, is especially liable to arise, or we may have an even more frank pathologic state such as hepatic sclerosis, renal degeneration, diabetes, and so on.

The mere fact that the heart is too big for the body is in itself a serious matter, even if there has been no overstrain of valves or of vessels.

Very similar conditions exist in the case of youths who pass directly from farm work or other similar occupations to the sedentary life of students and then of professional practitioners, or who enter sedentary business life more or less directly. Especially disastrous is the effect of repeated readjustments of the balance between the ordinary requirements of the body and hypertrophic muscular and cardiovascular systems, as when after a vacation the individual attempts to return immediately to his former habits of labor. Owing to the length and regularity of vacations, these results are more liable to be noted in teachers than in others.

Thus, in spite of poetry, fourth-reader literature, and even works on hygiene, we are often impressed with the superior powers of endurance, persistence of youth and better general health and longevity of city boys in the ordinary professional and business walks of life.

The writer admits a heterodox view as to the value of gymnasiums, even when athletic contests are excluded and when there is competent supervision and a striving for symmetric muscular development. The indoor air, the sharing of a swimming pool by large numbers of even reasonably clean men, the cold-blooded following out of courses of training without the interest

which attaches to analogous courses in mental studies, nor the value which the latter courses may have in practical application, the consumption of time, are among the unfavorable factors.

Two-thirds to three-fourths of the energy derived from food by the average professional or business man is consumed in involuntary, vital, visceral processes. Whatever mere muscular exercise is necessary to visceral health can be taken in useful or directly pleasurable use of the legs, and, indeed, we need not go beyond the personal experience of the average buggy or automobile-riding physician to learn that good general health is consistent with a minimum of actual physical exercise.

Whether, from the hygienic standpoint, a symmetric muscular development of considerable amount, such for instance as is maintained by the wild animals or by man in a state of nature and such as is established as an artistic standard, is desirable or not, seems exceedingly questionable. From the economic standpoint it is certainly better for the professional and business class of workers to hire soldiers, policemen and laborers to perform their manual labor vicariously. Of course, there are emergencies when every man wishes for the physical strength for defensive or offensive encounter with other men, the lower animals or inanimate obstacles. But there are many more occasions when every individual desires some special mental, artistic or technical equipment to meet an emergency. It is impossible for the individual to be independent of his fellows, except in a state of low savagery in which all are at about the same level and no one has any particular prowess which amounts to much.

Reference may be made to tuberculosis, for which we have learned the lesson that it is not exercise—except in a very restricted sense—that is needed, but rather open air and rest.

While chemic analysis of air shows comparatively slight qualitative and quantitative differences between country air, city air, and even outdoor air laden with offen-

sive odors and indoor air under conditions of fair ventilation, certain gases not normally present in the atmosphere, but due to manufactures, imperfect combustion, etc., are decidedly deleterious even in minute quantities. Pure carbon dioxide is not toxic in the strict sense and can act practically only when present in sufficient amount to interfere with respiratory exchange. Only under exceptional conditions can anything approaching this amount be present. Yet, empirically, we know that when the air contains much more than twice the normal proportion of four-tenths of one percent of carbon dioxide, it does act deleteriously. In all probability the real trouble is due to organic waste-matters of high toxicity which are not as yet susceptible of satisfactory chemical determination.

Troubles of the Fresh-Air Crank

It must not be forgotten that fresh air often implies exposure to changes of temperature, dampness, local chilling and wetting, and even to bacteria in dirt and dust. The fresh-air crank therefore not infrequently suffers from colds, rheumatism (whatever that may be) and conditions due to superficial ischemia not manifesting themselves as ordinary colds.

It may even be allowable to mention the heterodox view that a tuberculous patient, or one sick with any other disease, should not be subjected to exposure which would be considered excessive for a healthy but delicate person. It may also be asked whether protracted exposure to cold by a tuberculous patient who, to keep warm, must be swathed in clothing and rugs so that the only point of entrance of fresh air is the nose, really derives so much benefit as one more lightly dressed, spending most of the time in a well-ventilated and fairly warm inclosure, where radiation and evaporation from considerable skin-areas is also possible. For some reason there is a modern insistence on cold as well as fresh air in the treatment of phthisis. Unquestionably there is a reflex stimulation from cold, but it is doubtful whether this stimulation does not require an intermittence in its applica-

tion. Also, something closely akin to the benefit of exercise is derived from the consumption of calories in warming inspired air. Whether the air-passages are sufficiently cooled to have any appreciable influence on the vitality of tubercle bacilli seems very improbable and, even if we grant this contention, we may well ask whether there is not a counterbalancing depression of vital processes.

The Effect of Humidity

The exceedingly depressing effect of warm, moist air is sufficiently explained by the interference with heat regulation by evaporation. The writer confesses to being unable to understand the unwholesome effect of "dampness" as such, especially when we consider the somewhat inconsistent condemnation of a dry atmosphere. It is scarcely necessary to call attention to the fact that dampness does not mean watery content of the atmosphere, since identical content of water may imply moist air at a cool temperature and dryness at a warm temperature. Certainly, except for lassitude, which may be partly explained by oscillation, the dampness of ocean-air is not harmful. On the other hand, the decrease in humidity due merely to warming outdoor air in houses would seem to be compensatory to the interference with evaporation and, hence, with temperature regulation by the heavier underclothes ordinarily worn in winter. Obviously, in a room at a temperature of 70° F. and a humidity of 15-20 degrees one evaporates more water than in outdoor summer-air at the same temperature and with a humidity of 40-70 degrees. But it is rather far-fetched to claim that actual damage is done even to the nasal mucosa or to the cornea by this evaporation, in view of the natural provisions for keeping these parts moist, and certainly the extra demand for water is easily met and rather beneficial than harmful.

For some months the writer has kept track of the fluctuations in humidity of the air. These have varied from practically zero in a hot room with steam-heat up to 75 degrees on rainy days in summer in an

open window. Some hygienists emphasize the bad effect of such variations, but it should be remembered that the natural variation is from about 20 to 75 degrees, and that there is no particular reason to ascribe serious results to such fluctuations. Indeed, the figures give a greatly exaggerated idea of the amount of water present.

The vicinity of pure water does not constitute an unfavorable factor, and the writer is convinced that the harmful effects of "dampness" are due to faulty drainage, development of saprophytic life in surface water, indication of joint contamination of indoor air with products of respiration and combustion, chilling, and various other factors not directly concerned with humidity.

Mental Activity

After reading a certain class of medical literature the writer wonders that our educational system has left anyone free from neurasthenia, not to mention organic disease. As a matter of fact, the boys and girls and young men and women of the last twenty years seem to be more healthy and capable of more endurance than those of an earlier generation. There has been an enormous increase in the proportion of youths who finish the grammar-school, the high-school and the college course, respectively. Compulsory-education laws do not apply to the two latter, and scarcely to the last grade or two of the grammar school. It is inconceivable that parental compulsion would act efficiently against such factors as a significant crippling of strength or that the average well-disposed child would tolerate or even enjoy, as he certainly does, a life that is inherently cruel and unreasonable in its demands.

There is no question but that special courses, with shorter hours, easier lessons and slower progress, should be instituted for children who are organically diseased, physically delicate, handicapped by visual and aural defects or by lack of mental development. The institution of such a course would certainly be feasible in every city. But the fact remains that the present school course, though not perfect, does meet

both the requirements and the abilities of the average American child in a reasonably satisfactory manner. It is even worth while to consider whether a corresponding harder and shorter course might not be established for children of rather more than the average mentality, who absorb a good deal of culture and education at home and who expect to pursue their studies through college and some professional school.

The writer would even go so far as to claim, from personal experience and observation, that mental exercise of reasonable degree and duration has precisely the same favorable influence on the so-called vegetative processes of the body as muscular exercise—probably on account of almost identical circulatory and neurotrophic processes.

The Question of Recreation

Excepting in cases of physical or nervous exhaustion, it may be questioned whether rest is so much needed as a breaking of routine and pleasurable enlivening of the brain. Some few individuals subject themselves to undue degrees of mental strain. Often this is due to avarice rather than necessity. A colleague once said to me: "Yesterday I saw over sixty patients and I did not get to bed till two o'clock. What do you think of that?" My reply somewhat surprised him—"I think you are a d—d hog." But, with capable men worrying because they could not get enough work to make ends meet, the reply seemed justifiable, barring the method of expression. Even in manual labor organization has secured hours much shorter than the average endurance of the human body and the tension under which modern manual labor is performed is light.

Of course, there are numerous cases in which actual rest of mind or body, or of both, is needed. On the other hand, to prescribe cessation from labor often involves more worry and strain than it relieves, while to advise retirement from interesting work for a man of, say, sixty, often renders him uncomfortable, impresses his on-coming senility upon him and almost inevitably shortens his life.

On the whole, rather frequent, brief vacations, with as nearly as possible complete change of occupation and environment, seem to do the most good, and this fact should be particularly applied to ourselves.

The Element of Enjoyment

It is important to remember also that the element of enjoyment is important. Largely for this reason cold-blooded attempts to build up muscle and consume calories in a gymnasium have been considered inferior to outdoor sports, even of the simplest kind, as pedestrianism or wheeling. A scientific hobby is valuable for the average man, not so much because of what he may accomplish scientifically, as because it affords recreation and adds zest to outdoor exercise. A trilobite, a rare weed, a few Indian arrow-heads as an object, render walking and bicycling something better than a tread-mill in the open air.

Even purely social functions have a valuable hygienic use if not abused. Aside from outdoor sports of various kinds, almost the only social diversion that has any purely physical value is dancing. As commonly practised at present, with freer and more natural rhythmic movement than formerly, on hardwood floors and with abundant ventilation, it is practically devoid of unhygienic factors, except for those organically diseased or more or less mentally perverted, providing, of course, that it is enjoyed in moderation.

The hygienist should realize that moderation itself should be enjoined in moderation. The extreme limit of endurance should never be reached, either in use of the muscles, tension of the arteries, pumping capacity of the heart, prolongation of effort, postponement of rest or curtailment of sleep, or in any other respect. But the man who engages in any exercise, sport or recreation with an alarm set to mark the optimum length of a walk, the degree of fatigue which may be considered strictly physiologic, or his bedtime, misses the supreme psychic value of an interruption of his routine of work.

Not to mention the fact that the "quitter" is a nuisance to his associates, we should remember that it is as impossible to lay down the mathematic limit of wholesome diversion as of a physiologic process. In both there is a broad zone in which the normal shades into the excessive. Just as any form of recreation, however innocent and however enjoyable in general, loses much of its value if not entered on by spontaneous choice, so its hygienic value suffers by arbitrary curtailment, though such an abrupt ending is often necessary for those lacking in that form of common sense which is at the bottom of all true temperance.

Self-mastery is an important detail in hygienic training and yet it should not go so far as to involve self-slavery. There should be a reasonable compromise between wise forethought, looking toward the general welfare, and an enjoyment of the appetites and recreation which serves its own immediate end. By appetite is here meant a natural, and not a perverted, craving.

Excepting as required for business reasons, it should be remembered that while regularity of habits is conducive to health, it should be a natural regularity commensurate with the quantitative standards of physiology, not a purely artificial regularity only to be attained by clocks and similar man-made machinery. The man who rises and retires at exact times, takes his cold bath, his exercise and his meals by a timetable, who eats so much of this and that viand at each meal, and whose diary would consist of an entry for January 1 and ditto marks for the remaining 364 days of the year, is a nervous crank and is maintained in that condition by a vicious cycle. Such a man may be a very useful cog in the economic machinery of the world, but he is never more than that.

In every phase of hygiene variety and pleasure are important factors. That they must not be allowed to assume the degree of irregularity, excess and self-indulgence, does not detract from their importance.

OPTIMISM VERSUS PESSIMISM

The condition of mental stasis that leads men to believe that many of the acute diseases are uninfluenced by medication, and how it is brought about

By ARTHUR E. SWEATLAND, M. D., Little Rock, Arkansas

THE words of disregard for the principles laid down in the "clean-up-and-keep-clean" way of treating all kinds of fever, or rather, I should say, fever arising from any cause whatever, shows mental stasis. It is not unusual to hear men prominent in the profession making the assertion that typhoid fever, pneumonia, smallpox, etc., are self-limited and that their term of duration is uninfluenced by medication. Such a position can only be taken by those who are willing to take the sayings of the ordinary textbook as law and gospel, placing their faith upon what they read and allowing the sayings of others to keep them from striking out on free, inde-

pendent lines, making each case one of deep thought and investigation.

Those who Condemn and Have Never Tried

Those who most pessimistically shout against active-principle medication are those who have never tried its virtues and consequently have never found them. This "tommyrot" about "commercialism" won't go. It is a mere subterfuge under which to conceal ignorance or laziness, and in many cases both. Abbott never asked anyone to buy his pharmaceutical products if he could find better somewhere else.

The facts are that the editors of CLINICAL MEDICINE have given us the active princi-

ples in such form that we can apply them with preciseness and definiteness. We can take two granules of veratrine in a condition where tissue-waste is circulating in the blood, and in two minutes the pulse has lost its bounding fulness and if you look at the veinlets in the conjunctiva you will notice that they have decreased in size. We cannot get such definite effects with anything but an active principle. The effects of strychnine can be shown in the same way. Hypodermic medication has gone out of vogue with me since we have the pure, active part of the drug in possession. Strychnine in most instances acts much quicker if dissolved on the tongue than if injected subcutaneously. If you inject it into a vein it acts only a little quicker than if dissolved on the tongue. While the strychnine is being absorbed you can hold the pulse and when sufficient action is produced you can have the patient expectorate the remainder. These conditions hold good with nearly all drugs, so far as the power of absorption in the mouth goes. So it is that, with close observance of the action of drugs, drugs as definitely pure and active as may be, well grounded in our anatomy, both histologically and pathologically, knowing our physiology as best we may, we go forth to battle with disease.

Head off Disease—Eliminate

As active therapeutists we should look foolish indeed not to try to head off disease, instead of "going along behind, cussing it." The main thing is to know what to do, and then to go ahead and do it. Make your drugs available; this is important in all conditions, and especially in fevers. Eliminate through the bowels, the skin and lungs.

One little patient, a girl of seven years, had fever two or three days before I saw her. The abdomen was tympanitic, the stools were of a pea-soup consistency and foul-smelling, there was nosebleed, there was dropping of one eyelid, the temperature was higher in the evening than morning, and there was bronchial irritation. There was some mental disturbance. After my second

visit my old preceptor saw the patient with me for a number of times and shook his head and said: "If it were my case and in my part of the country, I should certainly expect the girl to be ill for several weeks." Was it typhoid fever? Well, it had all the earmarks, only the bacillus was not found and was not looked for.

The treatment in this case was magnesium sulphate freely given until the intestinal tract was swept out, followed by the sulphocarbolates of zinc, lime and sodium, com-



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bined with one-grain doses of the sulphate of magnesium and calcium every hour. Veratrine was also used to hold the temperature in check and assist in eliminating. Veratrine is a visceral eliminator. At first the pulse and fever showed invasion, but in three or four days enervation was the prominent condition and brucine was given to raise the nerve power and render the medicines available. Magnesium sulphate baths were given frequently, also a pack wrung out of the bath water was a constant application to the thorax and abdomen. The child was free from fever in seven days.

Burgess has shown us what magnesium sulphate will accomplish by way of aiding the skin to eliminate. It is difficult to demonstrate chemically, but clinically it is an easy matter. Such cases as related above I have had run four or six weeks, but it has been years since I have seen any

of these long-drawn-out cases of typhoid fever. I believe the time is near at hand when only in exceptional cases will typhoid fever continue for more than a week.

All glory is due to the men in the field who are carrying on this active therapeutic

work, making each and every case one for earnest research and investigation. The therapeutic nihilist is today a "dead soldier" and the rank and file of American physicians are now pushing into the field of active therapeutics.

SPARTEINE AND OTHER HEART TONICS

The record of several interesting cases in which this remedy gave relief and where other cardiants had been found unsatisfactory

By G. S. COPE, M. D., Ionia, Michigan

AFFECTIONS of the heart, both functional and organic, come to the notice of the practising physician almost daily; and with some a routine treatment is followed for such cases. Some administer tincture of digitalis or an infusion of digitalis leaves, some iron and some potassium iodide, this being about the gamut run by the ordinary Esculapian. Some patients are benefited, some get better in spite of the treatment, and some fail to respond.

The Thinking Man Welcomes Other Remedies

But to the thinking man—one who is familiar with the anatomy and physiology of the circulatory apparatus, and has a well-grounded knowledge of the pathological states this apparatus is subject to—the question of treatment and medication presents a most interesting problem, and not content with the above-mentioned remedies such a man sees the need for others, and gladly welcomes any or all that have been found of service, anything in nature that will answer the feeble calls of weakened blood-vessels and impoverished blood-cells in their heroic struggle to maintain the life they have been set to protect. By searching, man has found out many remedies, helps and adjuvants for cardiac ailments, and some that are medicines of great value, such as cactus, pulsatilla, digitalin and other deriva-

tives of digitalis, amyl nitrite, glonoin, strophanthin, cratægus and sparteine.

It is to the doctor feeling his way carefully in his dangerous cases of heart disease that a new help in the drug line

"Comes as welcome as the cry
That told the Indian isle were nigh
To the world-seeking Genoese:
When the land breeze, from wood of palm,
And orange groves, and fields of balm,
Blew o'er the Haytian seas."

In sparteine we have such a welcome help. It has an elective action all its own, and should be in every well-selected medicine case, standing shoulder to shoulder in bottled array with digitalin, apocynin, strophanthin, anemonin, strychnine, cornin, glonoin and cactin.

Cases Where Sparteine was Used

The following cases will illustrate its helpful action. Bear always in mind that the Almighty never intended one thing, or one man, or one set of principles, to do all the world's work, but that each in its proper sphere is selected to do its part of the great task that is being hourly accomplished by human hands and with rational methods.

Case 1. A lady, 50 years of age, has had valvular disease of the heart for ten years. Has at times been very dropsical; is anemic and neurasthenic. She is an "alkaloidist doctor's" wife, and her husband has by careful use of selected remedies successfully

carried her through many severe seizures when consulting physicians declared "there was no hope."

During these ten years the vicissitudes of the menopause have come with the other storms that have sought to engulf this frail bark, but so well has she responded to the "smallest possible dose" and "just enough," that a year ago she considered herself well, and was apparently as well and vigorous as any woman of her years. In January of this year, 1907, she contracted the grip and for nearly ninety days had a subnormal temperature and suffered from great debility and depression. She became emaciated and anemic, and angina pectoris came to assume the center of the stage. The case is typical. The least exertion, the movements of the arms, sudden excitement, will cause pain in the heart which radiates to the inside of the arms and stops at the wrists. These paroxysms are followed by extreme exhaustion.

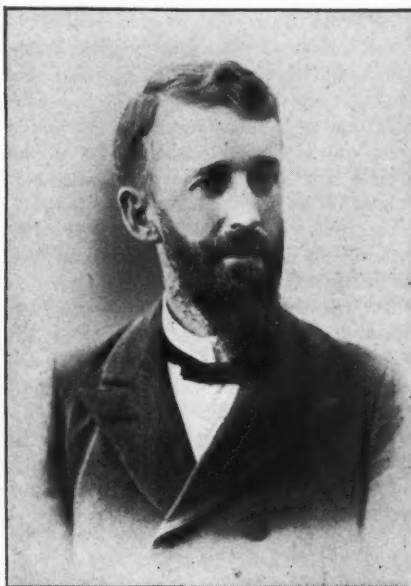
Now by many months of rest cure at her own home, the use of the "heart- tonic" granules, tonics and a carefully regulated diet, she is really improving. There have been times when the heart tonic would not give its wonted help. Then it was found that sometimes cornin would relieve and later sparteine came as a God-send to the doctor in his gallant fight. He is fighting yet and like Paul Jones, he has "not yet really begun to fight." Some men never know when they are whipped.

An Advanced Case of Cardiac Dropsy

Case 2. A man, 56 years old, was brought to me from a distant state. He had been sick with an old heart trouble and dropsy; had not lain down in bed for four months. He was absolutely helpless and required the aid of four strong men to carry him from the baggage car, where he had to ride, to the carriage which took him home.

I at once gave glonoin, strychnine and digitalin and began with a saturated solution of epsom salt, two tablespoonfuls every half hour. In thirty-six hours he had taken more than a pint of this solution. I also gave calomel and podophyllin, as

his tongue was heavily coated. There was complete anuria. The kidneys had almost ceased to functionate. He breathed in gasps and required to be fanned all the time. His scrotum and penis were like huge bladders, fully distended. I plunged the trocar (without canula) into the end of the head of penis, deeply into the loose tissue, and



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when it was withdrawn the serum came out. In this way and without shock we have in three weeks drawn off a little over eight gallons of this dropsical fluid. The patient breathes easier and the kidneys are taking on normal action.

He now gets, every four hours: apocynin, four granules; scillitin, four granules; calomel, 1-4 tablet. These keep the kidneys and bowels in good condition. As a general tonic, strychnine nitrate, gr. 1-60, is administered every four hours; for the heart, sparteine two tablets, gr. 1-2 each, from two to three times a day.

The patient is much improved. He was a high-liver and in former days a "sport." He called for alcoholic liquors which were

interdicted, but Holland gin is given as needed. The dry diet is strictly enforced. The sparteine has a fine action in the case, the patient expressing great relief from his dyspnea while under its influence.

A Missionary's Wife Helped by Sparteine

Case 3. Was reported to me by a physician who is a missionary just returned from a five years' sojourn in Central Africa. It is well known to those who practise in the tropics that the color of the blood in the veins and arteries is not so decided in color as is that of persons residing outside the torrid zone. This is probably due to the extreme heat and the lack of hemoglobin brought on by malarial and other poisons, so that the white resident, sooner or later succumbs to debility, characterized by loss of vitality and weakened heart action.

The wife of the missionary was taken sick with a tropical fever more than a year ago and so fierce was the struggle it was feared she must die, but she survived only to find herself bed-ridden. She could not sit up because of a weak heart and the faintness that followed the effort. For many months they had been treating her and hoping for the day she should be able to start home.

The Result of "Home" Missionary Work

Now comes a little story of the alkaloidal ministrations. When these missionaries were here, five years ago, I called their attention to CLINICAL MEDICINE and to the

alkaloids and secured for them a copy of the journal and a year's subscription and a bill of alkaloidal goods, which reached them in three months from the time of sending. One day while reading the journal, they chanced upon an article on sparteine, and they both said: "That seems good to us." This was before the wife's illness. In making their order for goods from London, England, which comes once a year, they ordered one bottle of sparteine hypodermic tablets, as the coated granules do not hold up so well in hot climates. These goods arrived while the wife was ill, and having received the boxes the black boys soon removed the covers and the precious bottle of sparteine was found and a hypodermic given. The change for the better was apparent from that very moment. It had an elective action in this case surely; the pain and weakness were relieved and the convalescence hastened.

Apropos of this incident comes another from the Congo. The doctor said that when he returned to his station the resident physician called his attention to a native nearly dead with dropsy. The question was asked, "Have you used apocynin?" and the answer was, "We never heard of it." It was given and the patient made a rapid recovery. This, too, was a case where the elective action of the drug was manifest. It will not do so in every case. Study to show thyself approved, rightly selecting the drug to be used.

THE things which our friends do with and for us, form a portion of our lives; for they strengthen and advance our personality. But the things which our enemies devise against us do not form part of our lives; we only experience them, reject them, and guard ourselves against them as against frost, storms, rain, hail, or any other external inconvenience which may be encountered.—Goethe.

A STUDY OF THE PRINCIPAL ALKALOIDS

With special reference to their periods of absorption, the duration of their action, and the methods and routes of their elimination from the body

By J. M. FRENCH, M. D., Milford, Massachusetts

AMONG the most important points to be understood in the study of any drug are the rapidity or slowness of its absorption, the duration of its action, and the methods and channels of its elimination. Though this information is of the highest importance, yet it is but lightly touched upon in most of the textbooks on materia medica and monographs on the actions of the various drugs. Something indeed is frequently told as to the channels through which the drug is eliminated, but the other points are nearly always neglected entirely or treated in a very insufficient way. Yet without this knowledge it is impossible to use the drug intelligently, or if it is an agent of great power, as in the case of the principal alkaloids, even with safety. A knowledge of the rapidity of absorption enables us to know how soon after the administration of a drug to look for its effects; of the duration of its action, how often the dose should be repeated; while knowing the channels through which it is carried out of the system enables us to understand what organs and functions will be chiefly affected by its elimination.

Upon What Absorption Depends

The rate of absorption of a drug depends upon three distinct elements: First, the nature of the preparation which is to be employed, whether decoction or infusion, tincture or fluid extract, solid extract or alkaloid. The vehicle in these cases has considerable influence, as whether aqueous or alcoholic, and whether given hot or cold; also the method of administration, whether by the mouth or rectum, or hypodermically. Second, the condition of the patient at the time of administration, as to his vigor and vitality or the lack of it, the rapidity and

strength of his circulation, the condition of his stomach and intestinal canal, whether full or empty, etc. Third, the nature of the drug itself; and it is to this particular phase of the subject that we shall devote our attention at this time.

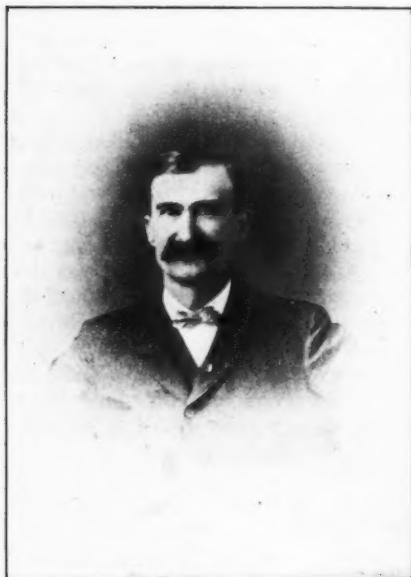
In our discussion of this subject we make no claim to having engaged in any physiological experimentation or original investigation of any kind. The method which we have followed has been to study carefully the reports of those who have made these original investigations, with a view of gathering from them the desired information. In a few instances the work has been comparatively easy; but more often we have been able to find but little information on the points for which we were seeking, or the statements made are blind, insufficient, unsatisfactory, or often contradictory. We have endeavored to give first the conclusions concerning which there is a general agreement, following these with a statement of the differing conclusions which seem worthy of notice, sometimes giving the authorities. We realize that at best the little we have been able to glean will be very unsatisfactory, and yet the sum of many pages of reading is compressed in a few lines. If it is of no further value, at least it may serve to call attention to the importance of the subject, and lead to further investigation.

Only Four Alkaloids Discussed Here

No class of remedies is of more value, greater power or more positive action, than the alkaloids and other active principles of plants. Hence we have begun our studies with a few of the best-known of these. In this paper we shall consider only four, namely, atropine, morphine, strychnine, and

quinine. In a future paper we hope to be able to present the facts in relation to a larger number of similar but perhaps less important alkaloids.

Atropine is rapidly absorbed when administered by the mouth, its effects being manifested within a very few minutes. The effects of a single medicinal dose are stated by most authorities to pass off in



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two or three hours. Van Renterghem, however, states that the effects of a moderate dose of atropine pass off in the same order in which they came on, in about twelve hours, except the ocular, which may last longer. Lutze states that belladonna effect acts over five weeks.

Atropine is eliminated almost entirely by the kidneys in the urine, and the urine of an atropinized animal will dilate the pupil of another animal. Minute quantities may pass off by other avenues, as the intestines, when the dose is large. Cushny says that when atropine is injected in the dog, it is excreted in small quantities in the urine, but most of it undergoes complete oxidation in the tissues.

Morphine acts quickly as compared with opium, and all opiates are rapidly absorbed when administered by the mouth. The effects of an ordinary dose can be felt in ten to fifteen minutes after it has been taken. When administered hypodermically the effect is much more rapid, and morphine given in this way can be detected in the saliva within three minutes afterward.

As is indicated by its rapid absorption, its effects are manifested for only a short time. Its elimination commences very quickly, and in the case of a single moderate dose is practically completed in a period of time which is variously stated at from twenty-four to forty-eight hours. Lutze states that its period of action is only a few hours.

Morphine is excreted mainly by the digestive tract, in the saliva, gastric juice, intestinal fluids and by the kidneys. After a hypodermic injection it is found in the urine, feces, sweat, tears, milk, saliva and gastric juice.

Quinine is absorbed, performs its part in the system and passes off, with considerable, though varying, rapidity. It appears in the urine within from twenty to thirty minutes from the time of its administration, if the dose is a large one. It is eliminated mainly by the kidneys, in the urine, from one-third to one-half being excreted during the first six hours, after which it passes off more slowly; in some experiments only about two-thirds was excreted in forty-eight hours, while in others three-fourths had passed off in twelve hours; and traces are still to be found at the end of seventy-two hours. It is probable that some of the quinine is eliminated through channels other than the kidneys. In some fevers its excretion is said to be considerably retarded. Kerner found that some of the quinine was partly hydrated in the tissues and excreted as dihydroxyl-quinine, but Cushny says that if any such change occurs, it can affect only a very small proportion of the alkaloid, as over ninety percent of the whole amount ingested has been recovered from the urine.

Strychnine is absorbed rather slowly from the stomach, but much more rapidly from the rectum. When a poisonous dose has

been taken by the mouth, the symptoms usually come on in fifteen or twenty minutes, rarely after an hour, with great suddenness. If the dose is not large enough to prove fatal, the paralysis and other symptoms pass off after a time which usually varies from one to two days. In poisoning from strychnine it is the rule for the patient to recover if he survives more than three hours after the administration of the drug.

From these statements, the action of strychnine lasts from one to two days.

Lutze says nux vomica acts from ten to twelve days.

Strychnine is to some extent oxidized in the system, the remainder being eliminated by the urinary, salivary, and cutaneous channels. As its action is to contract the renal arteries, it hinders its own excretion by the kidneys, and hence may accumulate in the system if continuously administered even in small doses. It is therefore wise to suspend its use at intervals. Its elimination is more rapid in children than in old people.

THE LOSS TO PHYSICIANS FROM HOSPITAL WORK

How the multiplication of hospitals affects the economic welfare of the physician. Read before the Strafford County and District Medical Society, Dover, N. H., October 31, 1907

By A. NOEL SMITH, M. D., Dover, New Hampshire

HOSPITALS are a blessing to the community; indeed, there is very little doubt but that they are a necessity, while they are becoming more and more indispensable. Of course the large cities are quite well supplied with them, but the smaller cities and towns are also getting to be well equipped. The race for supremacy seems to be well on between the Carnegie libraries and the cottage hospitals.

The necessity for hospitals has existed all through the centuries ever since disease has afflicted the human family. About the latter part of the fourth century the Persian empire was for a little while the only place where medicine could be cultivated and be protected by the laws. Certain Christians, called Nestorians, founded a school of medicine at Edessa, in Mesopotamia. Pupils came from all parts and studied practical medicine in a public hospital. This was probably the first institution for clinical instruction.

In most of our cities the hospitals have been founded and are maintained by private endowments. New York City supports

Bellevue and allied hospitals at an outlay of \$600,000 a year, which is about 15 cents per capita. Boston is the most notable of those cities which maintain a general hospital at public expense. Her City Hospital costs the citizens 79 cents per capita, an average yearly expense now of nearly \$500,000. The Carney Hospital has done a great work in its forty-three years of existence. It has no funds from which it derives an income, and no regular source of support. It is maintained in part by the fees of such persons as are able to pay, and from fairs and entertainments which are held from time to time for its benefit. About 2,500 persons were treated in the wards last year, about half of them paying the regular fee, while half of the remainder paid in part.

The burden of hospitals would rest more easily, of course, upon communities if founded and maintained by endowments; and the Massachusetts General Hospital has recently made appeals for endowments.

It is all right for the Brighams, the Morgans, the Rockefellers and the Wentworths to give of their abundance to found and

maintain hospitals, but I am firmly convinced that it is all wrong for the average physician to contribute so lavishly of his means, his time and his ability toward the success of these institutions.

Where is the Physician's Reward?

Men and women give of their abundance a single gift, therewith furnishing a hospital room or ward; and their names are engraved upon tablets to perpetuate the fact. And this is well. The physician or surgeon bestows his gifts of time and labor, which represent money, and does this perennially. However, no note is taken of it, except an occasional vote of thanks; and thanks never yet bought shoes for the babies or purchased horses, carriages or automobiles, which are the doctor's necessities. Our only tablet is the possible gratitude of the patient who recovers, and a threatened suit for malpractice if the patient dies.

The hospital avoids litigation by hiding behind the bulwark of a charitable institution; while the poor doctor, who with his own brain and hands performs the deed of charity, stands unshielded, with nothing to ward off the blow of a malpractice suit.

So much has come to pass as the result of medical and surgical progress, that doctors can no longer really afford their present generous attitude. To be sure, salaries have increased in value, and the estimation in which physicians are held has become higher than a century or two ago. But there is great danger of professional degeneration from increase in number, and from decrease in business. I know of no other profession or calling the members of which are constantly working to reduce their own income. But this reduction follows the prevention of disease, and physicians strive to prevent, not to induce or prolong, disease. Fifty years ago, if a case of scarlet-fever developed in a city the size of our own, hundreds of cases would well follow. Now, when a single case shows its head, our watchfulness and quarantine prevent the second case.

Physicians, in a sense, receive a larger average income than formerly, but their ex-

penses are vastly more. As one well puts it: "Gratuities and honorariums used to be the rule when the doctor had to take hay and cordwood for his pay. Nowadays the doctor gets sixty days net, and two percent in ten. He has to pay for paved streets, good sewage, and filtered water, which deprives him of his business; while the farmer comes along and charges him twenty-five cents a pound for his bacon, and forty cents a dozen for his eggs." Another says: "The cost of living and every accessory to a doctor's successful practice have increased his expenses from 20 to 50 percent in the last ten years. He is the only man who is trying to legislate himself out of a living. He is the only man whose services can be had at every hour, day or night, without money and without price."

And now, lest a good-sized fee might by chance fall into a physician's pocket, a judge in a Missouri court has decided that a doctor cannot lawfully base his charge to any degree upon the patient's income. As *The Journal of the American Medical Association* well puts it: "The physician's services, it seems, are to have a trade valuation like a loaf of bread or a pound of sugar, so that their value to the patient is in no sense dependent on the latter's economic importance."

I wonder how the legal profession would relish having their prospective fees curtailed in this manner?

*The Abridgment of the Physician's Income
a Vital Question*

And thus the abridgment of the doctor's income goes on, with here a little and there a good deal, so that it becomes easy to prophesy the disastrous termination.

Now, fellows, all this, and more, is true. It is unjust, it is wrong, and it ought to be righted.

"The time has come, the walrus said,
To talk of many things;
Of shoes and ships and sealing wax,
And cabbages and kings."

There comes a proper time to speak of even the most trivial things of life, as manifested in the lines just quoted from "The Walrus and the Carpenter." How much

more truly does a time come to speak of the weightier matters! In my judgment, and in the judgment of many other physicians, it is high time to consider and to act upon the subject of some form of remuneration for the medical and surgical staffs of hospitals.

The Medical Council speaks right out in meeting, editorially, and says: "All hospital physicians and surgeons should be paid for their work. The hospital authorities pay all others who furnish services or supplies, why not the very men upon whose work the entire success of the institution rests?"

Now, then, let me observe right here that the physician, and he alone, is to blame because he is not paid. Certainly no blame can be attached to the hospital authorities if physicians are so shortsighted as not to ask for remuneration. The patients are surely blameless, as they give the hospital its price. Indeed, many think that the doctor receives his fee out of what they pay, and they have expressed great surprise when otherwise informed.

Let it be noted, in this connection, that the physician is struck hard in more ways than one. Firstly, he works for nothing. In the next place, when a hospital is supported, or partly so, by taxation, he pays his proportion of the tax. Then, again, should some properties have to be enhanced in value to keep the tax-rate low, the supposedly wealthy doctor is always one of the elect to have his property appreciated. Still, again, when the hospital-aid societies send out their circulars soliciting subscriptions, the word is passed all along the line: "Be sure that each physician receives one."

The Public and the Physician

The attitude of the public toward the medical profession has changed since early hospital days. The inmates then were of the poorer classes, and the better classes did not care for the attendance of a physician who also waited on the poor. They have overcome wonderfully their scruples in this generation. Well-to-do people have been known to dress in old clothes and to

disguise themselves in various ways, in order to secure free treatment in our city dispensaries. In the Boston Ear and Eye Infirmary, when Dr. Derby was on duty, men and women, amply able to pay, would pauperize themselves in their efforts to cheat him out of his regular fees. Thus we physicians are not only defrauding ourselves but we are partners to the crime of making our neighbors and friends dishonest.

I have been credibly informed that in our own hospital a man, whose income was about \$8.00 a day, had a hernia following appendectomy operated upon without fee; and another patient was freely, so far as physicians' fees were concerned, conducted through pneumonia, although he owned his own home and possessed a good bank account. A young man, commanding a good salary, informed the writer that he should certainly go to the hospital, if ill. For he rightly deemed himself a fool to pay out good money for night and day nurses, and for a physician at his home, when he could get everything so cheaply at the hospital, with no doctor to fee.

And we physicians, in whose hands the entire adjustment of this matter rests, stand foolishly helpless and witness our incomes thus depreciated.

The Objects of the Hospital

The object of the hospital, in the first instance, as cited above, was for the purpose of imparting clinical instruction to students, and this object obtains today in some of our larger cities, especially near medical schools. In these cases the hospital staffs doubtless are remunerated by receipt of pay for their lectures in the schools. But, even so, they probably would not be overpaid if hospital salaries were forthcoming also.

Another early object of the hospital was to care for the worthy poor. Now, county and city physicians are provided to do this, and they are paid for their services; not extravagant salaries, to be sure, but *something*, and I affirm in this connection that when the city or county poor are transferred

to the hospital for treatment, the city or county physician should attend upon them there. Manifestly they receive salaries to do this very thing, and the work should not be imposed upon the hospital staff, who, under the present regime, work for nothing.

The fundamental objects for the establishment of hospitals seem to have resolved themselves into the prevention of any income for the physician, or, rather, the doctors themselves have been too indifferent, diffident or modest to claim their own.

Even endowed institutions abuse our good nature, and there is no earthly or heavenly reason why they should not recompense the attending physicians or surgeons.

One of these endowed institutions I serve during one month of each year—and I wasn't even asked if I would be willing to do so. I was merely notified that September was the month assigned to me.

The Benefits Derived by Physicians

But do not physicians reap any material benefit or reward resultant upon their connection with hospitals? I very gladly admit that they may do so. For example, friends of the patients, or the patients themselves, may employ the staff physician in private life. We often hear this remark: "I wish you to treat me after I leave the hospital, should any further attendance be required." Yet, after all, admitting this to be so, there is no remuneration for the work which has already been actually done in the hospital. I am reminded of a friend who found fault with a grain dealer who urged payment for a bag of corn. "The idea," he said, "that he should make such a fuss about *one* bag of corn, when I have bought grain of him for years." The dealer evidently could not see how any amount of previous patronage had paid for that particular bag of corn.

Then, again, it is argued that doctors can well afford to give a portion of their time to hospitals, as they have various sources of income, which the nurses and the others connected with the hospital do not have. Very well, this is true so far as it goes; but

do grocers, butchers, milkmen and others who furnish supplies to the hospital deliver them free for three months of each year? *They* have other sources from which to derive an income, just as physicians have.

Some Interesting Letters

A prominent physician of Philadelphia, Dr. Thomas J. Mays, an author of prominence, has written to me upon this matter as follows:

PHILADELPHIA, Aug. 16, 1907.

MY DEAR DOCTOR SMITH: I am very glad to hear from you and pleased to know that you are keeping up your interest in live medical matters. I realize that the problem which you are dissecting now is a very important one in medical economics, if such a term is applicable.

There is no use for me to peddle the trite knowledge to you that the way many things are, and the way they have always been conducted in the medical world, is wholly irrational. The idea is absurd that because hospitals are eleemosynary institutions all the medical services connected with them should be eleemosynary, too. Such things could not and would not exist except through the grace of the profession itself.

The Pennsylvania Hospital of this city or the Massachusetts General of Boston are not a whit more or less eleemosynary institutions than are our state hospitals for the insane. Yet in the latter the compensation for medical services is good, while in the former the pay is reputation.

The inconsistency is really ludicrous right at home here. The Pennsylvania Hospital corporation is a large concern, and maintains two departments, one at Spruce and Eighth streets for the sick and infirm, and the other at Market and Forty-fifth streets for the insane. Both departments have large accommodations. In the former the medical services are delivered free, so far as I know, while in the latter all the medical officers are receiving a liberal salary.

My dear fellow, I am glad you have gone into this work. The ground is fallow, but if rightly worked, promises a rich harvest, and I can assure you of my best wishes. Very sincerely yours,

THOMAS J. MAYS.

Let me read a letter from a Boston physician, Dr. Richard C. Cabot, whose words and face are ever familiar to New Hampshire physicians:

BOSTON, Aug. 26, 1907.

DEAR DOCTOR: I believe that for the good of the patients, as well as for other reasons, all physicians connected with hospitals should be paid. I also believe that they should be appointed with a distinct written contract as regards time and the nature of their work as physicians, teachers and investigators, and with the distinct understanding that as soon as any obviously better man (young or old) appears, he shall be appointed instead.

Whether there are any hospital trustees wise enough and energetic enough to take the matter

up from this standpoint, I don't know. But I do think that medical opinion is swinging that way, and that the new hospital connected with the Rockefeller Medical Institute in New York is to be organized on these lines.

I am much interested in your interest, and hope to see it bear fruit. Yours sincerely,

R. C. CABOT.

Dr. C. S. Bacon of Chicago says:

"It is coming to be recognized that there is a pauperizing tendency in the bestowal of medical aid without requiring any equivalent. If patients in emergency cases, like surgical accidents, were the only ones thus helped, the temptation would not be so great; but when a pregnant woman learns that she can be confined free in a hospital, and have the best of professional care and skill, she will make no effort to accumulate means to pay properly for the services of a private physician."

A chairman of one of the sections of the American Medical Association writes me as follows:

September 12, 1907.

MY DEAR DR. SMITH: Having just returned from my vacation, I am now availing myself of the opportunity to answer your very interesting letter. It seems to me that you will have no difficulty in having every physician who has anything to do with hospital staffs to agree with you that we ought to be paid. My only feeling about this is that such a thing will never be accomplished. In the first place, hospitals do not have enough money to carry on their work as exemplified by the constant begging which is going on. Then, again, if we insist upon being paid the chances are that we will lose our positions, for, curious as it may seem, there are others who want our positions, men who are as well qualified and perhaps better than we. On the whole I agree with you. Only tell us how to do it. (Signature omitted.)

Dr. Joseph Collins of New York City, Professor of Diseases of the Nervous System in the New York Postgraduate School and Hospital, has very kindly sent me the following letter:

NEW YORK, Sept. 25, 1907.

DEAR DR. SMITH: I have just returned from abroad and find your letter of the 12th of August awaiting me. It seems pretty late to answer it, but I am going to do it just as if I had received it yesterday. Your first question, "Is there any reason why any hospital physicians and surgeons should not be paid for his work?" is a question which would be very difficult for me to answer conscientiously by either yes or no. Personally I am in favor of doing hospital work gratuitously, and my reasons for it are many. In the first place, hospital patients are patients who haven't any money; they are absolutely poor. In the second place, there are few hospitals in this country, or in any other country, so far as I know, that are sufficiently well endowed to pay a staff of attending physicians and take care of their poor as well. In the next place, there is a tradition in our profession for which I have great reverence, that we take care

of the poor, and do it gratuitously. Now, of course, all this applies to hospitals for the treatment of the poor, for I do not know of any hospitals where people of means are cared for by physicians gratuitously. [Dr. Collins evidently hasn't visited Dover. —ED.] Of course, here in New York we have many hospitals, such as Roosevelt, St. Vincent's, Presbyterian, etc., to which patients go and pay for their room, pay for their medical services, and I cannot imagine anyone taking care of such persons without proper and adequate remuneration. With best regards, yours very sincerely,

JOSEPH COLLINS.

C. F. Hoover, M. D., of Cleveland, Ohio, Chairman of the Section of the Practice of Medicine, writes me as follows:

CLEVELAND, O., Aug. 20, 1907.

MY DEAR DOCTOR: It is my own practice not to receive any fees from patients who enter the open wards at Lakeside Hospital, even though they are sent there from my office. I think it is liable to create dissatisfaction or grounds of suspicion in the minds of other patients in the wards. I see no reason for changing this plan, though my surgical colleagues do collect fees from ward patients. Patients who are in private rooms I charge as I do any private patients. Very truly yours,

C. F. HOOVER.

A very prominent physician and noted author says:

Absence from town has prevented earlier answer to your query concerning paying hospital staffs. The only reason I know why they are not paid is that it is possible to get any number of physicians to serve for nothing. So long as the supply is so much in excess of the demand it is unlikely that the world will pay.

I have presented these letters *verbatim et literatim*, and I shall make no extended comment upon them, as they agree quite fully with my own position and opinion. We all expect to treat the really poor, but we object to being imposed upon by the really well-to-do. We cannot get blood from a turnip, but we can get sap from a live maple.

We Should Do Something

Now, then, what is the remedy for this condition of affairs? The answer is easy: *Do something*. As I have talked with physicians in private concerning this subject, they have uttered a hearty amen. Why not act? But some one will say, "Other places do thus and so." What of it? We are not obliged to do as others do. Why not be pioneers here in Strafford County in this matter as in other things, not waiting

for the Rockefeller Institute to take the initiative?

Dover physicians were the first in the country, so far as is known, to express a readiness to fellowship upon the basis of being physicians only, and in 1881 subscribed to the following agreement:

We, the undersigned, assuming that entire liberty of thought and freedom of opinion are absolutely essential to real progress in the science and art of medicine:

Resolve, First, That we will in no way approve, sanction or hold allegiance to any organization, society or name, as homeopathy, allopathy, eclecticism, and any other "pathy," or "ism" which by giving exceptional prominence and authority to any exclusive medical dogma or mode of practice tends to limit such freedom of thought or opinion.

Second, That we will recognize, professionally, only such honorable and well-accredited physicians as in their medical associations and conduct conform to the spirit of the foregoing resolution.

This agreement was signed by twenty physicians, one homeopath and one eclectic being among the number. The two latter also became members of the Dover and Strafford County and District Medical Societies. To our own Dr. Lathrop belongs the honor of the phraseology of the above resolution. Now the spirit of this agreement permeates every medical society throughout our country. Who can foretell the far-reaching effect of a Strafford County ripple set in motion concerning the subject of the paper.

Doubtless an amicably mutual adjustment of this matter could be made locally between

physicians and our several institutions. If the regular charges at the hospitals are not now large enough, sufficient should be added thereto to remunerate the physicians and surgeons. Such remuneration could take the form of a salary, or a graded schedule of tabulated fees could be established; while patients who are city or county charges should be attended by the city or county physician.

I am informed that in Lynn, Mass., at the contagious hospital for scarlet-fever and diphtheria, the attending physicians receive a salary for their work. It seems to me no greater hardship to minister to scarlet-fever and diphtheria patients than to a ward full of typhoid-fever cases.

The dispensary abuse is peculiar to large cities, and cannot well be brought within the scope of this paper. "The real trouble, however, with free hospital and dispensary service, now so popular in the cities, is, not that the poor are helped (as they ought to be), but that those who can really afford to pay are taken care of without charge."

I have purposely left the threadbare subject of charity out of the discussion, as enough of this, voluntary and otherwise, comes into the professional career of every physician; and, besides, some little charity should begin at home.

A STRONG life is like that of a ship of war which has its own place in the fleet and can share in its strength and discipline, but can also go forth alone in the solitude of the infinite sea. We ought to belong to society, to have our place in it and yet be capable of a complete individual existence outside of it.

—Hamerton.

POSTLINGUAL ABSORPTION OF MEDICINE

A neglected route for the administration of remedies, the substances which may be given in this way to good advantage and some of the diseases in which the postlingual method may be used

By GEORGE W. DAVIS, M. D., Ottawa, Kansas

IN June, 1899, while passing an examination before the Kansas State Board of Pharmacy, I was compelled to taste many of the drugs set out for identification. Fluid extract of aconite was among the one hundred drugs set out. I did the "identification" all right, by tasting, but—the sequels! I had 'em all! Muscular weakness, dim sight, dilated pupil, shallow, irregular and labored breathing, slow weak pulse, cold surface, clammy sweat, great anxiety, numbness and tingling of extremities, lowered body temperature, abolished sensation, impaired reflexes and motility—everything but the embalmer. Escaped! From that time and experience I began to study the subject of the absorption of medicines from the mouth. I have found myself much interested and instructed, and have been amply repaid for all the effort it has cost me.

What the Textbooks Say

Quoting from Potter's "Materia Medica, Pharmacy and Therapeutics," eighth edition, 1901, we find: "Medicines may be introduced into the circulation by various routes, including the mouth, the stomach, the rectum, the respiratory tract, the veins and arteries, the subcutaneous tissue and the integument.

"The mouth is the usual receptacle for medicines intended for the stomach, but may itself be employed for the introduction of minute quantities of powerful agents. A drop of the tincture of aconite placed on the tongue is quickly absorbed and soon manifests itself by the symptoms. Many of the small tablets for hypodermic administration, if placed under the tongue, are readily conveyed into the system, and used in this way form a very convenient means of medication with alkaloids and other active principles."

Butler in his "Materia Medica and Therapeutics" (Fourth edition, 1902) scarcely hints at this very useful method of administering medicines, brushing the whole subject aside with the following allusion: "Remedies may be applied externally to the skin or internally to the mucous membranes, either as a local application or to bring about a systemic action."

Stevens in his "Materia Medica and Therapeutics" declares more clearly the utility of postlingual absorption, in the following: "Absorption may take place from any part of the alimentary canal. Powerful remedies, as nitroglycerin and aconite, are readily absorbed from the tongue."

A. M. Wilson, A. M., M. D., whom the medical students dubbed "Dosimetric Wilson," professor of Materia Medica and Therapeutics of the U. M. C., used frequently to tell his class to exhibit their remedies wherever and whenever possible in the form of alkaloids and urge their patients to chew the granules and hold the substance on the back of the tongues, that they might get immediate and certain results.

The Knowledge Born of Emergencies

I practised medicine in a small village among country people for seven years and there, amid all the varying emergencies that arose, I learned to lay my hands on such therapeutic armamentaria as were of certain definite composition and strength and such as were always reliable and whose physiological action and therapeutic effects I could trust when long dark muddy miles had intervened between my sick patient and myself.

Further, I learned to choose what medicine would soonest give relief in the smallest quantity and to administer such medicines

in a way to get from it its best, quickest and safest results.

If I found my patient "tied up in a knot," suffering the horrible pangs of an acute gastralgia, I flashed the hypodermic needle and some trusty remedy.

In calling your attention to the postlingual method of application of medicines, I do not decry the use of the hypodermic method. That's tried, true, trustworthy and certain and should always be available. But I would urge you to begin now (if you have not already) to study, experiment with and use the postlingual method until you can rely as certainly upon this method as upon hypodermics.

Our Postlingual Armamentarium

Fortunately for the student experimenter and practitioner of this mode of drug administration, we have now at hand nearly every drug, every medicine, necessary to treat, relieve and cure disease in convenient form and dosage. Alkaloids, resinoids, glucosides, acids, salts of various metals, and various chemical combinations are adapted to postlingual administration—such remedies as aloin, digitalin, strychnine, pilocarpine, glonoin, gelseminine, atropine, aconitine, cactin, etc. The adjuvant of suggestive therapeutics involved in the administration of medicines by postlingual absorption is wholesome. The hypodermic syringe—the only possible rival of this method—has its drawbacks, in its unhandiness, danger of infection and its untoward suggestion.

I remember one hot soggy Fourth of July night, when I was bending over a patient who was suffering from acute *mania a potu*, just administering a hypodermic of apomorphine, I heard one neighbor outside the window ask another, "How is he?"

"Oh, he's a goner," was the reply, "I see Doc punchin' medisin in his arm."

On another occasion I essayed to administer a sedative to a very large Amazon who was nearly crazed by pain. She saw me advancing with the needle prepared, and let out a series of frenzied yells. Her husband, her cousin and her uncle seized her. I passed the syringe to the undergraduate who was with

me—I had a boil on my neck and was glad of it for once! A fierce struggle ensued, but no hypodermic for her! I persuaded her to chew some tablets (1-2 grain of morphine and 1-2 grain of emetine) and in fifteen minutes she was free from pain and almost everything else that was loose.

She afterward explained to me that "Aunt Sarah would ha' ben liven' yet ef they didn't a stuck her on her arms with them hyperdermerings."

Diseases Where the Postlingual Route May be Tried

Without enumerating some of the class of cases to which the postlingual absorption method of administration is adapted I would feel that my colleagues might justly accuse me of having "gone to seed" on the back of the tongue—as it were. Here are a few:

Afterpains: Hyoscyamine gr. 1-250 (or more) every hour. If extreme, then hyoscine, morphine and cactin compound, half a tablet every six hours, held long on the back of the tongue.

Pertussis: Trional, hyoscyamine.

Vesical colic: Codeine, gr. 1-2, or heroin, gr. 1-50, on the tongue.

Angina pectoris: Glonoin, gr. 1-250, on the tongue—better follow with one hyoscine, morphine and cactin by the same method. If very extreme, better swing in the hypodermic with 1-4 grain morphine, 1-100 grain atropine first.

Uterine hemorrhages: Ergotin, 2 grains, postlingually. Don't forget the curet. Don't swallow the "taken cold" or the "fell-off-the-door-step" story.

Asthma: Hyoscine, morphine and cactin half tablet followed by other half at end of one hour. The most efficient treatment for acute attack. Aspidospermine may do much good given by postlingual absorption every fifteen minutes during first three hours.

Uterine colic: Hypodermic of water with one tablet of hyoscine, morphine and cactin on back of the tongue.

Cancer: When incurable and inoperable, hyoscine, morphine and cactin, twelve hours apart—postlingual absorption. I have a

patient now aged sixty-six with a large incurable cancer who uses one hyoscine, morphine and cactin every eleven hours and gets complete surcease from pain. Walks about very comfortably.

Neuralgia, trifacial: Aconitine, gr. 1-134 every fifteen minutes dissolved on the back of tongue, until tingling sensation is quite acute.

Coma: Croton oil wiped on back of tongue. Caffeine hypodermically.

Spasms in infants: Emetine or apomorphine, in mouth. If high temperature, give also aconitine the same way. Children are not good patients for postlingual absorption except when they can't help it, i. e., when comatose.

Dysmenorrhea: Hyoscine, morphine and cactin, very small doses on back of tongue until flow is well established. I don't believe hyoscine, morphine and cactin will form any drug-habit. [On that point it is well to be careful.—ED.]

Pleurisy: I have used aconitine and heroin on the tongue and kept patient free from suffering while heat, collodion, constrictures, potassium iodide cleared away the wreck.

In earache postlingual administration of morphine, small dose, is an ideal relief.

Pericarditis: I use bryonin, gr. 1-67, giving it every thirty minutes on the back of the tongue until the patient is relieved of the acute symptoms.

Gastralgia: If very acute, a hypodermic of about 1-8 grain morphine followed or accompanied by one-half tablet hyoscine, morphine and cactin.

Palpitation, bad enough to call for my services, I use cactin, gr. 1-134, alternating every fifteen minutes with sparteine, gr. 1-6, on back of tongue, until the distress is ameliorated.

Cerebral hemorrhage: Croton oil on tongue.

Mumps: I gave small doses of pilocarpine on back of tongue, 1-67 grain, and repeated not oftener than every two hours; this lessens pain, swelling and danger of metastasis.

In cases of cerebral meningitis and in cerebrospinal meningeal affections,¹ hyoscine, morphine and cactin on back of tongue, one whole tablet, or half tablets every two, four, six or eight hours as needed, keeping patient in cold room. [Better use half tablets, giving to effect only.—ED.] Rectal feeding, etc.

Lastly, in labor, I believe hyoscine, morphine and cactin is the greatest blessing that ever came to motherhood. I need not tell you how to use it. This journal is full of it, and after having used it I endorse all that is said in its favor by the "dosimetric cranks," but I found my place to crow—for certainly postlingual absorption is the ideal method for administering this hyoscine combination.

THE DOCTOR'S MEDICAL BOOKS AND JOURNALS

Being another chapter in the series, "Concerning the Doctor Himself." What the physician should read, how to preserve the things of value and the kind of books he should buy

By MAYNARD A. AUSTIN, M. D., Anderson, Indiana

Professor of the Principles of Surgery, College of Medicine of Indiana University, Indianapolis, Indiana

WHAT a fine library has Doctor So and Sol! "What a lot of junk fills up his book cases" would more often express the truth.

Probably more money is wasted in medical literature than in any other form of

printed matter. Probably a smaller percentage of what is printed is read by those for whom it is intended than of any other form of communications. Why this is, and why it should be, are two things that can be explained most easily in the old saying:

"Familiarity breeds contempt." There hardly can be any other explanation.

Every doctor's desk is the recipient of medical literature of various kinds. In nearly every mail medical journals, good, bad and indifferent, are sent to him as samples, as complimentary numbers or for the judicious exploitation of some new drug or chemical compound. No human mind could comprehend the contents of the literature that is thus spread out for the doctor's daily attention. On the other hand, it would be unwise and a waste of time for any doctor to digest the contents of even specialized articles, for much that he would have to go over would be reviews of uncertain and undated textbook material. What the student and the busy man desires is an article which he takes the time to read is something new, something short and to the point, or comprehensive and limited to facts.

Many authors write articles for the busy practitioner that are of value only to the student and the inexperienced. Others write of theoretical possibilities that are of no interest to anyone outside those in closest touch with research laboratories. Others take pleasure in enumerating case histories of patients who survive their treatments, forgetting to mention the failures, which teach us most.

Unavailable Medical Literature

Contributions to medical literature, like legal decisions, are becoming so numerous that it is beginning to appear that we have obtained possession and knowledge of almost everything but the use of common sense. In nearly every office are to be found bound volumes of old medical journals which have never been opened since they were received from the binder. Were their owner to take them up he would have to acknowledge that a memorandum book would contain all that he might have found valuable in them. Of course to any one with the means, the time and the inclination for wanderings in ancient history, such volumes are useful, and that someone should preserve them is a matter of necessity. This however is the function of our public libraries, but an unprofitable

waste of time, space and money for the average doctor. On the other hand, in other doctor's offices we are accustomed to see piled up in the back room volume after volume of different medical journals, useless and waiting the arrival of the inevitable ragman. What things of value they contain are buried in the heap of printed matter and might require days and weeks to hunt it out, even with the knowledge of volume and date that is to be found in an index rerum.

How then are we to dispose of our journals so that we may make available those things which we find of value in our journal grazings, and keep from being overloaded with the mass of information that is thrust upon us.

The first requisite is a prodigious wastebasket. The second is a knowledge of what we want. The third is an ability to use the scissors. The fourth is a set of boxes, envelopes or letter files.

How to Classify and Preserve Clippings

Every physician interests himself in some line of work. Internal medicine, surgery, gynecology, genitourinary diseases, etc. The classification of no two men's literature would be alike. For the general practitioner, a dozen boxes would be more than sufficient, into which the knowledge given in a hundred volumes of journals could be contained. His classification might be, first, continued fevers; second, the exanthemata; third, nervous diseases; fourth, stomach and bowel diseases; fifth, other abdominal conditions; sixth, diseases of women; seventh, diseases of bones, joints, and muscles; eighth, puerperal conditions; ninth, genitourinary and rectal diseases; tenth, special conditions of the throat, nose and skin; eleventh, tuberculosis; twelfth, therapeutics other than medicinal.

Each of these subjects can be subdivided into many parts, according to a man's inclination and the demands of his work. The surgeon will have a box for each of the organs which he explores. The specialist would have a box for each of the diseases which he is called upon to treat. Sectional-book-case manufacturers now make filing

cases to fit the regular book sections, so that these devices allow of no deviation or irregularity in even the particular man's library.

Now a dozen articles may come out in as many different journals on one particular subject. If one of the articles is comprehensive of all that is written in the other eleven, what is the use of saving the other eleven? We receive our journals and they are neatly piled on the corner of our desk or book case each morning. We glance at the advertisements, finger the leaves, see something good, and lay it aside for future reference, when we may need it. But when we do need it, where or when did we see it, and how or where are we to find it? We have our waste basket, our boxes, our scissors, a paper of pins and we are ready to locate "What we want, where we want, when we want it."

Tearing, Saving, Filing and Classifying

Firstly, the front and back advertisements are torn from all magazines worthy of keeping or reviewing, as soon as they are received. This saves about two-thirds of the space they usually occupy on our shelves, as we commonly lay them back. Next, at our leisure, we look through the journal and tear out any article that promises to offer anything new, unusual or more practical than what we already possess. It is surprising how little we will tear out. These clippings, accumulating daily in a general box, can be sorted at our leisure, according to our several desires. After our accumulation of clippings has covered several years, every time we look into a box to obtain special information on any subject, we will find dead material which we can throw away, for very frequently a new and exhaustive article, by one man, will have everything of importance that is contained in the other articles we possess on that subject.

Medical journals are indispensable. They are the necessary means for the rapid dissemination of a knowledge of the important discoveries in our work. They furnish an outlet for our exuberant energies and a summary of the results of many men's work along single lines, permits us to form opin-

ions as to the justifiability of method and the usefulness of the means we use in our combats with disease.

Textbooks Behind the Times

On an average, medical knowledge is printed in medical journals from two to five years in advance of its appearance in medical textbooks, hence the average working library composed of textbooks alone is from two to five years behind times. This offers the medical publishers the opportunity which they have been overdoing, in putting on the market medical textbooks that have one or two new features to commend them to the book buyer. These new features are issued and shown in the prospectuses, and according to the versatility of the agent, the doctor pays a good round sum for the knowledge which is buried among his medical journals but which he is unable to find.

Publishers are vying with one another in the elaboration of their books with pictures taken from life, which next to our clinical courses, give us the greatest assistance. On the other hand, every agent who comes to our offices brings with him a lot of many-volumed "Systems" and seeks to make us buy something which we regret when it is placed on our shelves. Many physicians are profiting by their past experience and are refusing to accept any book or place an order for any unless it is sent on approval.

Just why the doctor should have to buy his textbooks "sight unseen," has been discussed many times. One factor undoubtedly is that the average doctor would buy few or no books without the persuasive influence of the loquacious book agent.

Expenditure for the Library

The working library of an up-to-date and active man requires the expenditure of from five to ten dollars a month. Twenty-five dollars a year ought to provide a half dozen good medical journals, always including the journal published in his immediate neighborhood and supplying home news and information concerning those whom he may call in consultation. The additions to one's library one should make not

with a desire to show quantity but quality. One book purchased every three months whose contents are thoroughly digested gives one a postgraduate course. Special monographs can be purchased, exhaustively considering the many phases of nearly every disease and perusal of one of them opens our eyes to the magnitude of our responsibility. Kelly, on "Appendicitis;" Treves on "Intestinal Obstruction;" Webster on "Ectopic Pregnancy;" Kelynack on "Renal Growths;" Graham on "Hydatid Disease;" Keen on "Surgical Complications of Typhoid Fever," and Moynihan on "Gallstones" are prominent examples.

Two Classes of General Interest

Last but not least are mentioned two classes of medical books that are of universal sale. One contains a series of articles prepared by our master minds, covering special subjects that ought to be of interest to everyone. Like all of the many so-called "Systems" though, these volumes contain much that is not of interest and rarely contain more than one or two articles that are read by the purchaser. The internist does not care for the "Diagnosis and Treatment of Hemorrhoids." The surgeon does not

care for the "Prophylactic and Curative Treatment of Influenza." The gynecologist will not read fifty pages devoted to "Milk Bacteria and Cholera Infantum;" while the ophthalmologist is required to overlook three hundred pages devoted to the above in order to get ten pages treating of "Paralysis of the Ocular Muscles."

To obviate the above, our medical journals have established elaborate digests of all current medical literature; but more valuable than any are the series of medical Year Books in which separate volumes are devoted to a complete review of all that has been published the previous year in particular lines of work. Surgery is treated in one volume; Obstetrics and Gynecology are important enough to be considered in separate books. The internist has so great a field that two volumes are devoted to his work. In all, ten volumes are sufficiently comprehensive to give a man an entire review of all the theory and practice that the previous year added to our knowledge of our science and our art.

"By their works ye shall know them," and the student must take advantage of all that can profit him. How to do this with the least labor is learned only by experience.

A FEW HYPODERMATIC PURGATIVES

The advantages of a satisfactory subcutaneous purgative, if such an one can be found, and some of the remedies which have been used to produce purgation in this way

By E. S. McKEE, M. D., Cincinnati, Ohio

A SATISFACTORY subcutaneous purgative is a want seriously felt in medicine. For example in such conditions as inflammation of the stomach when that organ is so sensitive that it will not retain a purgative, in apoplexy, coma and unconsciousness, obstruction to the esophagus or refusal of the patient to take medicine, and after certain operations, a drug which could be administered subcutaneously, satisfactorily, would be of the greatest advantage.

Many pharmacologists and manufacturing chemists have been and are studying this subject and experimenting with it, but so far with varied success.

Podophyllin a Hypodermic Cathartic

Podophyllin may be taken as an example of a group of vegetable cathartics, solutions of which introduced either under the skin or intravenously occasion increased peristalsis. Podwissotzky has found two active principles

in podophyllin: a neutral crystalline substance known as podophyllotoxin ($C_{23}H_{24}O_8$), and picropodophyllin. The official resin of podophyllin consists of two resins: one soluble in both ether and alcohol, the other in alcohol alone. Squibb describes podophyllotoxin as a yellowish white, very bitter powder, soluble in alcohol, partially soluble in ether and chloroform; a drastic cathartic. Its dose, by the mouth, is 1-12 to 1-8 grain (0.005 to 0.008 Gm.) in alcoholic solution.

Podophyllotoxin injected under the skin of an animal or man causes purgation in from twenty minutes to one hour. The injection of 1-5 grain under the skin of a terrier produced seven liquid stools within three hours. If podophyllotoxin is injected under the skin of a cat and the cat killed a few hours later, the gut from near the stomach to the large intestine shows marked congestion. If the mucous membrane and contents of this portion be extracted with alcohol a solution is obtained which possesses the properties of podophyllotoxin.

The local irritation of this drug, when used subcutaneously, is such that it can not be used indiscriminately. This objection holds with solutions of the other vegetable cathartics which act when used hypodermically, such as aloes, senna and colocynth.

Mackenzie and Dixon (*Edinburgh Medical Journal*, November, 1898) report a number of experiments with podophyllotoxin hypodermically in cats, dogs, and men resulting in copious evacuations in about one-half hour.

Subcutaneous Use of Magnesium Sulphate

Magnesium sulphate injected subcutaneously in an adult person will cause purgation. It is needless to say that this effect is produced in an entirely different way from that by the mouth. Magnesium sulphate administered by the mouth causes no increase in peristalsis but acts by the increased amount of fluid which it attracts into the intestines. The hypodermic injection causes increased peristalsis. The injections are generally made in the arm and in doses of 1 and 1-2 grains of a 2- or 3-percent solution. This result occurred only in a majority of the

cases. A further objection is its supposed toxicity, which might occur if it is directly injected into the blood.

Digitalis, pilocarpine, physostigmine and muscarine produce this effect when administered hypodermically in sufficient doses but the ill effects which accompany them prevent their use in this way, for this purpose. Colchicine has been suggested and tried, but has been cast aside on account of its simultaneous action on the stomach and its insidious and late depressing effect on the medulla.

Salicylate of eserine has been studied by Craig of Boston and Vineberg of the Mt. Sinai Hospital of New York. They used it in milligram-doses hypodermically every three hours, producing catharsis in 50 to 75 percent of cases. It acts on the muscular coat of the intestine, like ergot on the muscles of the uterus. It does not cause pouring out of fluids into the intestine. It will not act if the muscles of the intestines are so distended with gas that they are paralyzed.

Atropine has been known to produce peristalsis in some cases when used hypodermically. It is not likely to come into favor because of its action on the secretory glands.

Of the morphine group morphine injected in large doses in man induces purgation and vomiting in some cases. Apomorphine is a powerful emetic but has little effect on the intestine. Codeine produces purging in animals more readily than morphine, while apocodeine brings on purging without any vomiting.

Apocodeine Hydrochloride

Guinard showed first that vomiting did not follow the use of this substance as in the case of apomorphine. Murrell experimented with it and discovered that it was of value as an expectorant. Roviart used it subcutaneously in patients suffering from constipation and reported in its favor. Two cubic centimeters of a 1-percent solution of apocodeine hydrochloride (about 3-8 grain) injected under the skin of a man produced one or two soft motions in an hour. There is no feeling of nausea and a slight irritation

at the seat of the injection passes off in a short time.

Experiments on animals go to show that apocodeine acts diametrically opposite to nicotine, that is, it causes vasomotor dilation, fall of blood pressure, increased peristaltic movements. The absence of effect on the stomach by apocodeine may be explained by the fact that the sympathetic gives few if any fibers to the stomach. It can not act centrally on the brain because increased peristalsis can still be seen when the vagi and cord are cut, nor can it act on the extreme periphery, for when applied directly to the living intestine all movements cease. On injecting moderate quantities of this remedy into anesthetized cats and dogs or rabbits it is easy to show that certain ganglionic cells are paralyzed. After the injection of apocodeine stimulation of the chorda tympani gives no increased submaxillary secretion, although the secretory neurons are active, because the exhibition of pilocarpine still gives rise to a greatly augmented secretion.

We infer from this that the ganglionic cells are paralyzed on the chorda tympani.

Experiments with apocodeine hypodermically have been made on an extensive scale by Prof. Combemale, of the University of Lille. In his hands the injection of 30 mm. of a 1-percent solution of apocodeine hydrochloride was followed in almost every instance within half an hour by one or two loose stools. The only bad effect he found was some irritation of the skin at the site of the injection, which was avoided by injecting the drug deeply into the muscular tissue.

Apocodeine lowers blood pressure, produces vasodilation, and increases peristaltic movement. This all occurs probably from its sedative action on the sympathetic inhibitory ganglia. It does not produce vomiting or other ill effects and merits an extensive trial as a hypodermic purgative. A one- or two-percent solution of the hydrochloride of apocodeine should be used, which solution should be filtered and neutral. Two or three Cc. should be injected for a dose.

BE BRAVE—AND LIVE

The beautiful little poem which follows is by a member of the "Clinic Family", whose innate and really unpardonable modesty impells him to write "incog", though he did finally consent to sign "Stamats". Perhaps you know him. If not, you should—for he is a glorious fellow, one of the elect!

The poem speaks for itself, but it is an inspiration to high ideals which should, and we believe will, find a response in the hearts of all of us.

Be brave, my soul, for cowardice is weakness;
Be strong, for weakness is disgrace;
Care not for clouds, for sunlight is eternal;
The one who falters never wins a race.

If there are sorrows, live not in their shadows
But seek the sunshine of new joys;
Grieve not o'er wrongs, for grieving cannot right
them,
And mourning only cheerfulness alloys.

Oft many tons of rock pass through the crusher
Ere they produce an ounce of gold;
A thousand shells are broken to discover
One hidden pearl of perfect mould.

Faint not nor fall away by the wayside
Press on, the mighty current stem;
For Life's rewards, however you may doubt
them,
Surpass in worth or gold or gem.

Talk not of death, there is no death but failure
(Who dares to fail, deserves to die)
But fill your life up to the fullest measure:
Let "LIVE" be your eternal battle-cry.



THE TONSIL FROM THE MODERN VIEWPOINT

The attitude of the physician toward the tonsil and its diseases, with the method of examination and the operative and other methods of treatment

By GEORGE L. RICHARDS, M. D., Fall River, Massachusetts

Associate Editor of the *Annals of Otolaryngology and Rhinology*; Otolaryngologist to the Union and St. Anne's Hospitals.

RECENT investigations by Goodale and Wood have shown conclusively, first that absorption can take place through the tonsils by means of the mucous membrane of its crypts and secondly that the tonsils have direct connection with and drain through the superficial and deep cervical lymphatics. The ordinary and well-recognized clinical phenomena of an acute tonsillitis are in perfect accord with this anatomical fact, the constitutional symptoms and general disturbance of which are frequently out of all proportion to what can be seen on inspection of the tonsils themselves. In quinsy we have first the symptomatology of an acute tonsillitis and then, through closure of the crypt-outlets with the prevention of external drainage, the retention of a purulent product with the final formation of an abscess. This abscess is not usually in the gland itself, which is too resistant, but in the cellular tissue of the triangle formed by the union of the palatoglossus and palatopharyngeus muscles above and the connective-tissue stroma between the tonsil and the muscular structures external to it.

Careful study of the tonsils in many cases of tubercular cervical glands have shown them to be diseased, even though there was no apparent enlargement, while acute articular rheumatism is now regarded as being in

a large number of cases, perhaps the majority, a sequel to diseased tonsils or following some form of tonsillar inflammation.

The Attitude of the Physician to the Tonsil

Assuming these facts to be true, what shall be the attitude of the physician to the tonsil? Shall he, as a preventive measure, make war upon every tonsil? Assuredly no, but in the presence of any symptoms, acute or chronic, which suggest tonsillar trouble, let him carefully examine the tonsil and ascertain whether it is diseased or not. By a diseased tonsil we mean one that is a hindrance to the proper performance of the function of the body. It may or may not be hypertrophied. Some of the tonsils which most urgently demand removal are the small submerged, almost invisible, tonsils. The diseased tonsil, then, may be hypertrophied and a mechanical obstacle in the throat, it may have diseased crypts secreting purulent matter, it may be the subject of repeated attacks of inflammation, or it may be associated with cervical adenitis, tuberculosis or rheumatism.

Method of Examination

The patient should sit in front of the doctor, facing a good white daylight, or one may use a forehead mirror with a good

source of illumination: a tongue depressor, probe, and some form of stout hook with which to retract the anterior pillars, are required. Depress the tongue and note the relation of the tonsils to the anterior pillars; whether as the patient gags they roll toward each other so as to touch, even though at first they seemed quite a distance apart; whether they are apparently small, yet the anterior pillar looks as though it had a small marble concealed behind it which becomes visible as a good-sized tonsil when, with the hook, the pillar is drawn backward. Take a light curet and probe and see whether the crypts lead deeply and contain white, cheesy matter easily squeezed out. Finally, feel with the finger over the pillar so as to note how much of the tonsil is posterior to the pillar. Grasp the tonsil with hook and see if it can be drawn out into the throat. Much information as to its condition can be ascertained in this way, whether tough and fibrous or soft and spongy.

Having ascertained its size, relationships and condition, what shall we do with it? If it is large mechanically or diseased, remove it. If it is associated with attacks of rheumatism, tonsillitis or the presence of enlarged glands, remove it as a possible source of infection, better gotten rid of. If it is a small gland, apparently healthy, giving no general or constitutional symptoms, let it alone. I say remove it, i. e., provided the consent of the patient can be obtained. If this can not be obtained, as will sometimes be the case, endeavor by local treatment, such as stimulation and cleansing measures with the use of local caustics, as silver nitrate in varying proportions (3 to 20 per cent), chromic acid, trichloroacetic acid and the like, to clean out the crypts and render the gland as harmless as possible.

Which Operation Shall We Use?

If removal is decided upon, shall it be tonsillotomy, the slicing off of a piece of the gland, or tonsillectomy with its thorough enucleation? Until a comparatively short time it was taught and practised by most laryngologists, myself included, that the removal of such portion of the gland as pro-

jected beyond the anterior and posterior pillars was all that was required. Many of us have had the opportunity to reexamine some of our cases after the lapse of years and to note that such an operation had failed, in not a few cases, to do for the patient all that we had hoped such an operation would do. There were the so-called recurrences, really hypertrophies of a gland which had had a slice taken off from it (for I do not believe that a tonsil once really removed ever grows again), the attacks of tonsillitis and even of peritonsillar abscess, so that when we removed, as we supposed, a tonsil, we were unwilling to promise that there would never be an attack of tonsillitis again. In many cases, perhaps most, the incomplete operation proved a success, yet not infrequently it failed to do all that had been hoped for it.

All of the instruments for tonsil removal, such as the Mackenzie guillotine and the Fahnstock and Matthieu tonsillotomes, were based on the principle of removing some but not all of the gland. Gradually the study of the absorptive action and drainage relationship of the tonsil have led us to the belief that tonsillar removal, enucleation, with the leaving of the pillars freely movable instead of fast to a diseased stump, was what was wanted.

It has been said and sometimes, perhaps, with reason, that the voice was injured by removal of the tonsil. I think where this occurred that it was due to the adhesion which resulted from the attachment of the tonsillar stump to the pillars.

Tonsillar hemorrhage had always, and rightly so, been a bugbear to the operation. Mostly this was due to the fact that the bloodvessel injured was one of the pillar-vessels or else that the vessels, being in the tough fibrous stump, could not retract. Robertson pointed out, when he introduced his tonsillar scissors, that when hemorrhage took place the thing to do was to hunt for the particle of tonsil which had been left, which being removed, the hemorrhage would cease. The blood-supply of the tonsillar capsule consists of a number of relatively small vessels coursing parallel to the long axis

of the body, while the vessels in the gland are relatively larger and course at right angles.

Where the tonsil is completely removed its external surface will be found to consist of a thin but tough membranous capsule without holes to which many crypts lead but none pierce. Such a tonsil examined with a probe, will allow the probe to go to the capsular membrane but not through it. The cavity from which the tonsil came will feel soft to the finger and free from any gland-tissue and the pillars will be widely separated,

coming nearer as the cavity fills up and grows smaller, but not becoming adherent. Such a tonsil-operation leaves the throat sorer, takes longer to heal, a week to ten days, is more difficult to do (no skill is required for a tonsillotomy with a fork tonsillotome), but is sure in its ultimate results and requires no subsequent operation nor is there any fear of future attacks of tonsillitis or peritonsillar abscess.

The detailed technic for the performance of tonsillectomy will be given in a future paper.

A SUBSTITUTE FOR OBSTETRIC FORCEPS

Where "mother wit" found a means of securing immediate delivery in a "forceps case." An old but useful expedient which is a "boon to the parturient woman and a valuable resort to the doctor"

By J. DOBSON, M. D., Riverton, Connecticut

MEMBERS of the profession are sometimes unexpectedly placed in embarrassing positions where they have to exercise their wits and resourcefulness on scant notice. The writer was called into an obstetric case while on his rounds in the country, and not expecting anything in this line of practice, had not at hand his obstetrical outfit. The lady was in a discouraged state of mind and her friends were very anxious, bordering on alarm, at the tedious character of the labor, as the case had been lingering for seventy-two hours in the hands of an old "midwife" who was innocent of all technical knowledge. I was convinced that unless the lady had some assistance, trouble would result from sheer exhaustion. It was decidedly what we consider a "forceps case," but as I had no forceps at hand I forthwith resorted to a procedure often practised in the "old country," and one that might with advantage be more generally adopted here.

The parturient lady was seated on two chairs placed close together in front but allowing the backs to be separated sufficiently to permit the passage of the child and afford the operator room to work. A quilt

spread over the seats arranged so as to sag well down between the chairs. The carpet was protected by folded "comfortables" being spread on it and I placed myself behind the separated chairs to support the perineum and manipulate the gravid uterus through abdominal walls, meanwhile giving the patient all the encouragement—moral and physical support, and assurance that she would very quickly be "all right"—that I could.

The result was as I anticipated, for in a few minutes she had a pain and the uterus was felt to contract with much greater vigor than when the patient lay prone in bed, and the labor was completed without the slightest hitch, to the great delight of the patient and friends, who, by the way, were not a little amazed at the successful procedure.

I merely give this outline of the case for the benefit of younger obstetricians who may not be aware of this procedure, which is a boon to the parturient woman and a valuable resort to the doctor in many cases.

I have had frequent need to adopt the plan during the last thirty years, and it has never failed me. The one great essential is to support the perineum thoroughly until the head is born.

LUES: THE MOST PROTEAN OF DISEASES

Another of the "Informal Chats with the General Practitioner," in this number discussing the constitutional treatment of syphilis, with and without mercury

By WILLIAM J. ROBINSON, M. D., New York City
Editor of The Critic and Guide, Therapeutic Medicine, Altruria and The American Journal of Urology

THE constitutional treatment of the most protean of all diseases, syphilis, can be summarized in one word: *Hydrargyrum*. But right here we must make a stop. Among American physicians who make a specialty of treating syphilis there is not one who is opposed to the use of mercury. But there are still a few—a very few—anti-mercurialists left in Europe (Schweninger, Boeck), and in this country the number of general practitioners who decry the use of mercury in syphilis is quite respectable. Simply pooh-poohing their opinions and ending the matter by calling them ignoramuses will not do. A frank discussion of this extremely important subject will be more to the purpose.

The Aversion to Mercury

Whence arose this deep-seated aversion to the mercury in the minds of some physicians and laymen? Why has no other drug such active zealous opponents?

It is sufficient to read a description of the method of treatment of syphilis by mercury in the seventeenth and eighteenth centuries to comprehend at once the etiology of the intense antagonism to the drug. People were so stuffed with mercury that the saliva ran from their mouths by the pint and quart, their teeth dropped out, they became exhausted with bloody dysentery, were attacked with paralyses, etc., etc. No wonder that many began to consider the cure worse than the disease. At that time the antagonism to the use of mercury was perfectly justified and it is from that period that the prejudice against the drug still survives. Are patients still being injured by the improper administration of mercury? Undoubtedly, yes. But under careful, discriminating and individ-

ualized supervision, we can honestly and conscientiously answer: No.

Is mercury a specific in syphilis? Besides quinine in malaria, it is the best type of specific that we possess. When we see a macular eruption, a corona veneris, numerous papular and pustular syphilides which existed for months disappear within a few days under the administration of mercury (and we see the same thing thousands and thousands of times) we cannot help considering the drug a specific. When we see a syphilitic man begetting and a woman bearing one syphilitic child after another (or losing them by miscarriages) and then when we see an apparently healthy child born at full term after a thorough mercurial course administered to one or both parents—when we see thousands of such cases, we cannot help calling mercury a specific.

Now we have still better proofs—no, not better, but more direct, more unimpeachable. The spirochæta pallida bears a strong relationship to syphilis. In fact we are justified at this date in stating that it is the direct causative agent in syphilis. Examine a patient and note the approximate number of spirochetæ. Administer mercury for several days and the number of spirochetæ falls considerably. But Metchnikoff's latest experiments offer us a still stronger proof: On inoculating monkeys with syphilitic virus and rubbing in a calomel ointment soon after, syphilis fails to develop, while in those inoculated monkeys in which the ointment has not been used syphilis does develop. What stronger proof of the specificity of mercury against syphilis do we want?

Now comes another question. Can syphilis ever be cured without mercury? To this question we must answer in the affirma-

tive. We are not such narrow extremists as to believe that no case of syphilis can get well unless it has been treated by mercury. The animal organism has wonderful recuperative powers. It generates its own antitoxins, and under favorable conditions the *vis medicatrix naturæ* will overcome most diseases (which of course does not mean that it is not our duty to help nature along by all means at our command). A man can get over typhoid fever, smallpox, rheumatism, etc., without any treatment, and there is no reason why a robust constitution, placed under the most favorable hygienic conditions—lots of outdoor exercise, frequent hot baths, etc.—may not recover without the use of mercury. But the percentage of such “hygienic” or “spontaneous” recoveries is very small and the physician who undertakes to treat a case of syphilis without mercury takes on himself a terrible responsibility. And the physician who believes in

mercury, but refrains from using it, because the patient has prejudices against it, hardly deserves the name of physician. A physician must not permit a patient to dictate to him how and with what drugs he should or should not be treated.

One more point may be considered in this introductory chapter before we proceed to the details of the treatment. Some antimercurialists assert that the symptoms of the tertiary stage are really not symptoms of the disease, but the results of the toxic action of mercury. This has been sufficiently answered by Fournier who more than a quarter of a century ago has shown that the worst cerebral and bone lesions are found in syphilitics who have undergone no treatment with mercury at all. And besides, Virchow and Kussmaul have shown that the histologic changes produced by toxic doses of mercury are entirely different from those produced by constitutional syphilis.

THE CONSTANT OR GALVANIC CURRENT

How it is produced, its properties, its physiologic and therapeutic actions, with a description of some of the cases in which it has been found useful, with methods of application

By J. WALTER TORBETT, M. D., Marlin, Texas

I HAVE selected this subject (1) because it is one of the first forms of electricity known and used in a therapeutic way. (2) Because electricity is becoming much more used both commercially and therapeutically. (3) Because many quacks have rushed into the field of electricity as a new field not well understood and by their blatant, unreasonable advertisements have been able to prey upon the public credulity and pocketbook with equal facility. Such unscrupulous methods have done much to discredit electricity in all its modalities with the honest, conscientious physician and thereby rob him and his patients of one of the greatest remedial agents in many chronic painful ailments. (4) In this rapid age of improve-

ment we are too apt to slight the older, more worthy methods in many cases for the newer, more easily used high-frequency and x-ray currents, which of course have a large field of usefulness of their own but are frequently less beneficial than the constant current.

The continuous, direct, or galvanic, current is derived from the direct dynamo or from cells, either dry or liquid. I prefer cells because the voltage, or pressure, is not so high and can be regulated more easily, hence the current frequently is not so irritating; also because one can then be entirely independent of a power plant, its irregularities and break-downs.

But if you wish to have any success whatever with electricity you must first try to master its properties the same as you would

the various properties and doses of morphine or strychnine. But this has not been done by many of our most prominent nerve specialists, authors of our books on nervous diseases. I was surprised and disappointed on my first trip to New York to hear men of national reputation disregard electricity and recommend a splint and rest for three months in an ordinary case of sciatica, while others of equal prominence would cure such cases in two to four weeks by galvanism, high-frequency, or Morton-wave currents.

The Continuous Current and Its Properties

This current is one of low voltage, or pressure, usually 30 to 50 cells being preferable for ordinary use, giving about 30 volts and amperage from 1 to 100 or 200 ma. The wall-plates made by most of the reliable houses are all right. They should, of course, have a good meter and rheostat.

The three important properties, according to Prof. Neiswanger, of Chicago, all of which are possessed by the constant current, are electrolysis, phoresis, catalysis. The first, *electrolysis*, is the power of separating compounds into their primary elements. Any substance like flesh, a tumor or small growth containing mineral salts and water can be separated or destroyed. The second property is *phoresis*, which is the power of the current to drive or attract various alkalis from one pole of the battery to the other, being *cataphoresis* when driven from the positive pole, and *anaphoresis* if driven from the negative pole. Substances called bases—those which take the place of hydrogen in an acid—are attracted to the negative pole and hence when applied therapeutically to be driven into the tissues must be placed upon the positive pole. Iodine and other substances which represent the radical which unites with the base (as KI) are applied to the negative pole. The third property is *catalysis*, which is the influence an electric current has upon nutrition through the vasomotor and sympathetic nerves. All currents possess this property to a greater or less degree. Each pole of the battery has distinctly different properties which must be remembered always in treatment.

The electric influence extends throughout the substance connecting the two poles through the lines of least resistance. The elements freed by the power of electrolysis and transferred by phoresis collect only at or near each pole or electrode. At the anode, or positive pole, oxygen, chlorine and acids collect. It is more sedative and anodyne. It is acid in reaction as can be told readily by its turning moistened litmus paper red. If a small copper wire be used as the terminal of each pole and stuck into a potato or piece of meat and the current turned on, the positive terminal will by electrolysis decompose the copper, forming oxychloride of copper and turning the substance around it green. Carbon, gold, block tin and platinum are not so much affected and hence are better used as the anode. These substances collecting at the positive pole are called anions. It forms a seared, contracted scar if carried to the point of cauterization.

The bases, alkalis and hydrogen collect at the negative pole and are called cations. Hence the negative pole is alkaline in reaction, increases the blood supply, promotes absorption of hardened products of inflammation, produces irritation of the nerve supply, has no effect upon the electrode, forms a softer, more elevated, scar if carried to the point of cauterization. Neither pole under 50 ma. is alone germicidal but the power of electrolysis and phoresis may transfer germicides deeply into the tissues.

A full and elaborate discussion of these properties cannot be given in this short paper, but if these properties will be remembered and the pathological conditions carefully determined, if possible, we can readily decide which pole to apply to the part affected.

There is one thing more however which must be looked for, as pointed out by Apostoli, and that is a peculiar idiosyncrasy against electricity. The current must always be turned on and off very slowly and carefully so that all shocks are avoided. The indifferent electrode should best be large and placed some distance from the active one and be well covered and wet with hot water containing bicarbonate of sodium or soap lather. If after these precautions the

patient is made more nervous and the symptoms are decidedly aggravated we may conclude the patient has an idiosyncrasy. Such cases however are rare.

All connections should be free from rust, dirt and grease and tightly made.

Cases Where the Continuous Current Was Useful

I will briefly refer to some of the pathological conditions and peculiar and stubborn cases in which the continuous current was the principal agent in the restoration of health. It does not presuppose that it was or should be the only agency used. Diet, fresh air, baths, mental suggestion, etc., should all be made use of as great aids in the removal of any chronic condition.

In amenorrhea do not expect two or three days' treatment to regulate a case that has failed to respond to medicinal treatment continued for months. Anemia, etc., should be treated by diet and medicine, but in those cases who are irregular apparently from weakened functional activity—and when it does come is very scant—the application of the negative by the copper ball or the hydro-electric method if kept up for several weeks, 20 ma. ten minutes, three times each week, will frequently become normal.

In dysmenorrhea, when due to contracted os or to a hypersensitive or neuralgic condition (and I have seen some with no contraction at all and still very painful periods) can be cured almost always by the careful use of the intrauterine electrode, using the negative usually; but if the endometrium is very sensitive and has a tendency to bleed easily, the positive will then be more suitable, 10 to 30 ma. for five minutes, two or three times weekly. The negative is used to dilate the small os. The positive will stick to the membrane unless gently moved, but if it should, a reversal of the current for a few seconds will detach it. These intrauterine applications with the copper, zinc or mercuric cataphoresis of Massey are the greatest means of curing fungous or catarrhal endometritis where they will not submit to an operation. In fact, I have seen those whom curettage failed to benefit relieved by this

method. But the treatment should be continued for three weeks to four months, according to the severity of the case.

I recently had one case of climacteric hemorrhage, due to small fibroids, that refused to yield to packing, cauterization with Battey's solution, and various medicines, which stopped from one application of the positive intrauterine copper electrode annointed with adnephryn. I cured a young lady three years ago of a very severe case of acne rosacea who had taken extensive treatments in Hot Springs and St. Louis, even using the x-ray, by using simply the positive irido-platinum needle on the larger vessels and a five- to ten-minutes' application of a small black tin electrode over the nose wet with adrenalin chloride solution.

In rheumatic or syphilitic periostitis I have for the past three years used the positive electrode annointed with ichthyol over the painful part effecting a cure in a very short time when pus is not present, after constitutional remedies alone had failed.

Electrolysis of Urethral Strictures

The late Dr. Robert Newman I think positively established the value of electrolysis in urethral strictures, having treated over 3000 cases successfully. Cases thus treated do not relapse like those treated otherwise. The negative pole must be used for three to six minutes every second day and not more than 4 to 8 ma. I have treated a large number thus affected who also had rheumatism which disappeared just as soon as the strictures were removed. Francis Bishop's method of using a very large electrode over the back and sacrosciatic notch while a smaller one is passed over the nerve and its painful points is the most efficient method in many cases of sciatica.

Local paralysis of the seventh nerve, the hypoglossal, the gustatory and olfactory nerves have been quickly cured if treatment is begun at once. Apply positive over the painful part, while negative is usually placed over nucha or behind and under ear in Bell's palsy. Great care should be taken in giving electricity about the head, especially very small quantities should be used if both

electrodes are applied on the head. Never make the dose anywhere strong enough to be very painful.

Two very severe cases of long standing and much treatment, with neuralgic pains of the neck of the bladder and frequent micturition, were relieved by galvanism, using the positive in the vagina pressed against the bladder-neck and the negative over the abdomen. One had some small caruncles to which a solution of adrenalin and cocaine were applied followed by a strong current with the bare copper electrode. The caruncles had been cut off several times without good results.

I have treated two cases of specific retinitis, one diagnosed and treated by one of the best oculists in the state for about a year and thoroughly saturated with specific treatment, but with very little improvement. To the specific treatment galvanism was added; he regained his sight sufficiently to read large print and returned to work. He neglected his specific treatment; though his eyes remained the same he died later from acute bulbar palsy.

The other case, of only a few month's duration, took baths and treatment at Marlin and then at Hot Springs, with all the mercury and iodide he could use, with but little benefit; had to be led about. But by the addition of galvanism and high-frequency electricity he so improved that he now reads the newspaper and has remained so for a year. These cases received 5 ma. four to five minutes, negative over the eyes and positive over back of neck.

These cases have not been detailed here as examples of wonderful cures I have wrought but simply as results which anyone may and can achieve with the galvanic current by careful and painstaking work.

Electrical Treatment for Impotence

The hydroelectric application of the positive pole with the copper wire in the French catheter to the deep urethra is a very rapid

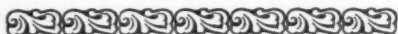
and remarkable treatment in the cure of functional impotence due to atonic, relaxed and congested conditions of the deep urethra. Also very beneficial in cases of chronic gleet.

There are two more uses of the galvanic current which I wish to mention, as taught so ably by Dr. G. Batton Massey, of Philadelphia. The first is the Apostoli treatment for interstitial fibroids, the intrauterine application of 100 ma. or less with copper electrode continued two or three times weekly for several months. He reports 110 cases symptomatically cured. The other is his method of mercuric cataphoresis in the cure of various cancers. The results shown by the "before and after" stereopticon pictures as given at the meetings of the American Electrotherapeutic Association the past three years have been remarkable; many cases, some inoperable, being cured more quickly than by the x-ray or any other method. That however is strictly a surgical procedure requiring a general anesthetic, the technic being given in full in his work on "Conservative Gynecology" and would require too much space to be described here.

The use of the negative pole—attached to a needle, of course—is a well-known method for removing warts, moles, also superfluous hairs, leaving very little scar.

I have a case of general, or multiple, neuritis now who is improving, more I think from the use of this current than anything else; she continued to grow worse from medicine alone. Of course this case is using mechanical vibration and tonics, as very few cases are treated by galvanism alone; but it is one of the agents that does the most good and recovery in suitable cases is not nearly so rapid when left off.

If this article shall succeed in stimulating a careful study and use of the galvanic current instead of the too common careless way of turning the apparatus over to the patient to be used as he pleases, I shall feel amply repaid for the trouble of its preparation.



FAULTY FASHIONS IN WOMEN'S DRESS

How abdominal compression by tight lacing has become an important factor in the production of pelvic disease. Read before the West Side Clinical Society, New York City, October 10, 1907

By WILLIAM EDWARDS FITCH, M. D., New York City

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"Seest thou not what a deformed thief this fashion is?"

WHEN I was requested by the chairman of your program committee to prepare a paper of more or less universal interest to the general practitioner, I was at a loss to answer him, and asked for time. After much thoughtful consideration I became convinced that the subject of "tight lacing" is of special interest to the physician, as well as to the gynecologist, while to womankind it is of momentous importance, and my only excuse for bringing this subject before you is the absolute necessity for seriously considering the subject of tight lacing as it exists today in all civilized countries.

Believing implicitly in the truth and earnestness of the views enunciated in this paper, the author feels no degree of trepidation in condemning tight lacing, and asks your thoughtful consideration of the subject as philanthropist, humanitarian and physician. I fear that in the mad rush for scientific research, we have, as physicians, overlooked the importance of this subject as an etiological factor in diseases of the female organs of generation. There is no one subject to which more importance should be given by the profession, and the author will try to point out faithfully, in a practical manner, the baneful effects of tight lacing, both as a factor in the etiology of disease and as an impediment to normal development of the uterine organs, which offers the greatest hindrance to disease; and at the same time to contrast the well-developed condition and freedom from pelvic disorders in those who do not practice tight lacing, with the frail constitutions, barrenness and various uterine dis-

orders found in those who wear the corset tight. I wish it understood, in the beginning, that tight lacing is not confined only to those who wear the corset, since other articles of clothing may be worn so tight as to do practically the same harm, though to a less degree.

Anatomy of the Female Pelvis

Before discussing this subject in detail it might be well to review briefly the anatomy of the female pelvis so that you may better comprehend the idea intended to be conveyed in this paper.

The female pelvis consists of a solid unyielding structure of bones with a false pelvis representing a truncated cone, the base looking upward and slightly flattened on its anterior; the external and internal oblique, transversalis, pyramidalis and rectus muscles, with sheaths and tendons combining, form the lateral and anterior walls of a cylinder continuous with the last-named structure. The spinal column lined with the quadratus lumborum muscles form the posterior wall.

Inclosed within this cylindrical body-pelvis, from diaphragm downward, are the various abdominal and pelvic organs, all readily and easily displaced by pressure. Among these we find the uterus, which remains undeveloped and in an infantile state until near the approach of puberty, when it develops rapidly and continues to increase in size, proportionately to the rest of the body, until the normal size is reached, which is usually between the sixteenth and twentieth year.

The virgin uterus is about two and one-half inches long, its width, at about the level of the fallopian tubes, nearly one and

three-quarter inches, and its weight about twelve drams. It is suspended in the pelvis by ligaments amounting to little less than folds of peritoneum. The fallopian tubes and ovaries, with feeble supports, spread out on the right and left of the uterus in connection with the broad ligaments almost at right angles.

The ovaries formed from the wolffian bodies rapidly begin to develop at the age of twelve—when a new era sets in—maturation and periodical rupture of the graffian follicles; just before and after menstruation the remaining parts of the organs of generation rapidly increase in size. At least eighty-five percent of girls reach full development of their generative organs between the twelfth and sixteenth years. It must not be overlooked that the uterus and appendages are covered almost entirely by peritoneum, which is very susceptible to injury from even the slightest causes: that the constriction of vessels supplying blood is of such a nature as to favor either anemia or congestion, proportionate to the degree of compression exerted. Knowing the free mobility of the uterus and appendages and the increased supply of blood the parts are receiving or should receive, we should more clearly understand the effects of pressure on an organ requiring rest and freedom during the period of development.

The Corset First Worn at Puberty

It is at or about this period, or more frequently earlier, that the young girl is allowed to commence wearing corsets, and she is not always given the proper instructions as to the degree of constriction that should be permitted.

"Either thou art most ignorant by age or wert born a fool."

* * *

"Nature stood with stupid eyes
And gaping mouth which testified surprise."

The law of growth in the human body is one which has not always been considered in relation to the development of girls. The energies of the body rise and fall in each individual with a certain rhythm. Each swell of the physical growth is designated to bring about certain morphological

and functional conditions; and when these conditions are not secured at the time nature is accustomed to bring them about or when their maturation and development is interfered with from faulty fashions in dress, there is a possibility of their not being completed and perfected in subsequent years. The maturity of the sexual apparatus and its function in the girl must be accomplished at that stage of develop-



Fig. 1.—Girl bending forward at work, showing how "tight lacing" increases abdominal pressure and depresses the pelvis organs.

ment known as puberty. It is, of all periods in the life of woman, the most important, for her future health, both physical and mental, depend upon its completion and perfection. All the care and all the intelligence that it is possible for mothers and physicians to bestow upon her should be given at this time. Not only motherhood and subsequent health, but sanity and lifelong happiness depend upon the perfect development of the female organs of generation. It does not seem unreasonable, therefore, that the foolish fashion of wearing tight corsets should be taboo.

Effect of the Ordinary Corset

The corset offered in the shops is so constructed that when worn it exerts its greatest constriction—pressure—from an inch or so above the brim of the pelvis downward, constricting the abdominal walls, the lower part of the thorax, and pushing inward the costal cartilages, often causing the seventh

and eighth ribs to overlap. The greatest point of constriction and compression is at the waist-line, in the immediate neighborhood of the stomach, which when distended, as after a hearty meal, produces the "hour-glass" stomach, often observed in this class of patients.

Tight lacing crowds the small intestines with the accompanying mesentery and

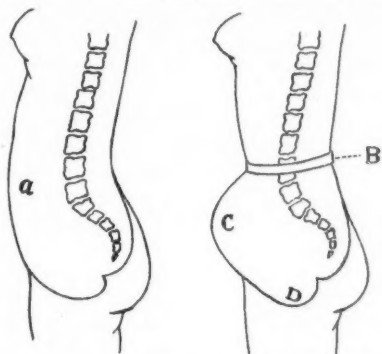


Fig. 2.—(After Gallant.) A—Normal contour of the anterior abdominal wall. B—Same patient with constricting waist band. C—Point of greatest protrusion. D—Pelvic floor bulged down from waist constriction.

colon into the pelvis, filling Douglas's anterior cul-de-sac; if the rectum is loaded with feces and the bladder empty, anteversion of the uterus follows; if the bladder is distended and the rectum empty, retroversion results, displacing the intestines into the posterior cul-de-sac. In most of these cases, where the compression is great enough to interfere with and retard the normal peristaltic action of the intestines, constipation is also produced.

Respiration of the "Natural" Woman

We no longer doubt that compression of any part or organ interferes with physiological growth and function, therefore all women who wear tight corsets and constricting waist-bands breathe with a well-marked sternal movement, which is unnatural, since nature intended woman to breathe like man—abdominally. Women when asleep breathe like men, and all animals, male and female, breathe alike—abdominally. Mays¹ has shown that Indian girls breathe like men, and Kellogg² has confirmed

this observation. Among several Indian tribes, Chinese women, agricultural women, English pit-brow lassies, and civilized women who wear their clothing loose at the waist or suspended from the shoulder, all show the same type of abdominal breathing; and the flimsy argument that chest-breathing is normal to women, because it is necessary during gestation, goes to the wind when it is shown³ that even in the last months of pregnancy abdominal respiratory movements predominate over thoracic movements. The most active respiratory organ, that muscle of respiration, the diaphragm, adapts itself most beautifully to circumstances, so that, when from tight lacing the abdomen is constricted, the type of breathing becomes thoracic, when pressure is relieved, it again changes to the abdominal type.

The Egyptians, who were foremost in the promotion of civilization, education and art, while allowing variations in luxuries, were the first to formulate legal barriers against the introduction of "any new ideas"

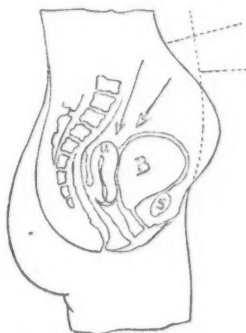


Fig. 3.—C—Corset line. N—Normal outline. B—Distended bladder. U—Uterus retroverted from tight lacing. S—Symphysis pubis.

of fashion in articles of dress tending to constrict the waist or in any way to attempt to modify the true teachings of nature.

Lacing Interferes with Abdominal Respiration

Does tight lacing and faulty dress interfere with normal abdominal respiration? The reasons for an affirmative answer are based on recent experimental researches by

which certain facts seem well established that heretofore have largely been matters of speculation, opinion, or prejudice, therefore we conclude as follows:

a. Normal breathing in woman is like that of man—abdominal; tight lacing changes the type to costal⁴.

b. The pelvic organs normally make a considerable excursion with each respira-

tion; downward from 1 to 3 inches and up again, in the case of women who have worn loose clothing about the waist.¹¹

Impeding Pelvic Circulation

Alternating pressure and relaxation accelerates the free flow of blood through the large venous plexuses and lymphatics; alternating traction and relaxation tends to develop uterine ligaments and their peritoneal investment, and gives tone to the muscular pelvic floor; alternate stretching and slackening tones up elastic supports. With each full inspiration the descent of the diaphragm increases abdominal pressure, and lessens that in the chest; blood is forced out of the portal and pelvic veins and sucked up above the diaphragm, therefore it is plain to the critical observer that any form of dress that cripples the free excursions of the diaphragm impedes the pelvic circulation. The blood flow of the uterine organs is seriously hindered in another way. The valveless ovarian veins empty in the area of greatest corset pressure which causes a damming back of a long volume of blood.

When a constricting corset is worn, little or no motion can occur, because all the

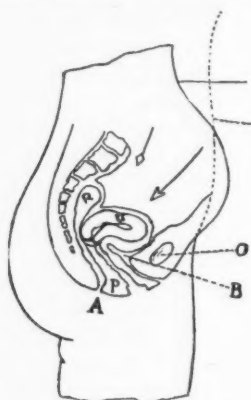


Fig. 4.—C—Corset line. N—Normal outline. U—Uterus forced down by corset, producing antiflexion. O—Os pubis. B—Empty bladder. R—Loaded rectum. P—Perineal body. A—Anus.

tion⁵; tight lacing in the ambulatory position prevents this motion almost entirely.

c. Sitting or leaning forward lessens intra-abdominal pressure⁶; tight lacing in these positions greatly increases intraabdominal pressure⁷.

d. Tight lacing displaces the uterus downward from 2 to 3 inches⁸.

e. The pelvic floor is bulged downward by tight lacing from 2 1-2 to 3 inches and the circulation rendered sluggish⁹.

f. Undue constriction of the waist from corsets is a constant impediment to free indoor exercises, and outdoor gymnastics are hampered.

g. It has been shown that a loose-fitting corset diminishes chest capacity one-fifth¹⁰ and a tight-fitting corset tends to atrophy of the abdominal muscle and accumulation of fat.

h. With each movement of the diaphragm the structures of the pelvic floor with the uterus and its adnexa are carried

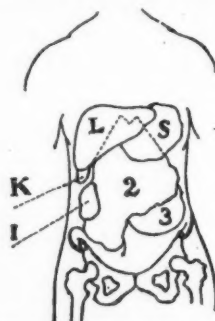


Fig. 5.—K L S—Kidney, liver and stomach in normal position. 1, 2, 3—Same organs displaced by tight lacing.

structures in the true pelvis are carried downward by constant pressure and crammed into the cylindrical cone-pelvis so tightly as entirely to impede movement.

Kellogg and others¹² have demonstrated that pressure from a tight corset, or from a loose corset with the wearer stooping

over or bending forward, bulges the pelvic floor downward to the utmost limit of its capacity, and the uterus is correspondingly forced to descend. This constant pressure for hours keeps the uterine supports tense and stretched for many hours daily, while exertion or stooping overstrains these taut structures still further.

Africans, Indians, Eskimos and the women of all other nations who wear loose-fitting clothing are almost entirely free from pelvic disease. It is in this class of women that we find the most natural and perfect pregnancy, the easiest and almost painless deliveries and the most rapid and perfectly satisfactory puerperium. Any physician who has practised medicine in the rural districts for the well-developed and healthy country woman, and later in the city for the dainty, delicate, badly nourished, poorly developed, and where tight lacing and other foolish fashions are practically universal, will soon be convinced that there is an explanation for the frequency of female ills and frailty in the latter, as compared with the freshness, vim and vigor, and fine physique of the former.

Tight Lacing a Cause of Uterine Maldevelopment

To any clear-minded, thinking physician there can be no doubt of the claim¹³ that 75 percent of the women who habitually practise tight lacing to any considerable extent suffer from maldevelopment of the uterine organs, especially if the corset is worn at that period of life when uterine development conduces to diseased conditions, and practically renders the normal physiological functions of the organs incomplete and painful, nor will it be longer doubted by the close observer of passing events.

Uterine Displacement

That subject about which so much has been written during the recent past, and the treatment of which has been so varied that "falling of the womb," so prevalent in the minds of so many women and a "hobby" for such a large number of doctors in the main, may be laid to the corset.

In no forms of mammalia, other than womankind of the civilized races, do we find uterine displacement or diseased conditions of the generative organs. Why is this? Tight lacing displaces the uterine organs and appendages, and maldevelopment is the result. In antelexion, which is often accompanied by inflammation of the uterosacral ligaments, the downward traction on the tender ligaments is especially dangerous, moreover, the increased pressure from above flexes the uterus still farther when the bladder is empty. Dickenson¹⁴ relates a case of a robust dress-maker who consulted him, measuring 5 inches less with corsets on than over her undershirt with corsets off. Her cervix and fundus met, so extensive was the bend. Without other treatment than removal of

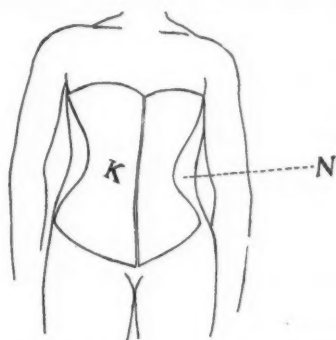


Fig. 6.—K—Girl in the ordinary corset. N—Same girl without corset; normal waist line. Note comparisons.

the corset the uterus assumed its normal position in three weeks. In decensus of any degree the ordinary corset should not be worn.

How Lacing Causes Retroversion

In retroversion the pressure is exerted on the anterior surface of the uterus, forcing the fundus backward. Indeed whenever an overdistended bladder tilts the organ backward, abdominal pressure increases the displacement. Kellogg and others have shown by autopsy¹⁵ that the abdominal organs are displaced by corset wearing. The liver has often been found pushed downward even to the iliac crests. One or both kid-

neys in thirty out of one hundred cases examined, were found abnormally low.

Maldevelopment of the uterus and appendages effects menstruation in various ways. Amenorrhea is frequently the result of a poorly developed mucosa and its adnexa together with faulty developed ovaries—a condition which, if neglected, often leads to atrophy, or you may find congestion—menorrhagia, with long-continued profuse flow. Dysmenorrhea is a condition mainly due to maldevelopment of both uterus and appendages, the nervous system, and also to the imperfect development of the muscular and cellular tissue entering into their make-up, rendering them inadequate to their physiological requirements.

Physiologists tell us that there are in the uterus embryonic cells which remain throughout life; they are the cause of epithelioma of the cervix, and the cervix in 98 percent of cases is the seat of uterine cancer, local irritation and ulceration being the exciting cause. Tight lacing by producing malposition forces the os downward against the floor of the vagina, causing inflammation, irritation and eventually ulceration. A prominent author says¹⁶: "Up to puberty the mortality for carcinoma is the same; afterward the relative proportion of female to male deaths gradually rises till it attains its maximum at about the sixtieth year. Cancer of the uterus is a rare disease among Indian women; occurring with so great frequency in all civilized countries it must have its explanation in some custom peculiar to such civilization."

Miscarriages, lacerated cervix, weak and inefficient contractions of the uterus in labor, protracted puerperium, the result of subinvolution, may often find their true explanation to be due, directly or indirectly, to maldevelopment. The increased frequency of endometritis, hyperplasia, erosion, stenosis, sterility and atresia of the cervix and os, must be largely due to this cause—a large

number of the parauterine cysts, as well as papillomatous cysts of the hilum, parovarian cysts of the broad ligaments, have their origin in these unobliterated ducts and the remains of the wolffian bodies. Maldevelopment is surely accountable for this condition of affairs. Fibroid and other tumors of the uterus have their etiology in maldevelopment of the organs of generation.¹⁷

During the past few decades the Germans, who have always been early and earnest workers in new fields, have been busy inventing new bandages, supports and corsets for displaced organs. Israel, of Berlin¹⁸, in a comparatively recent monograph describes a waist that acts by not interfering with the normal motions of the body, nor having any pads for making direct pressure over any of the abdominal organs or the



Fig. 7.—Proper way of putting on the straight-front corset.

organs of generation. It is an apparatus with triangular air-cushions, made to fit over Poupart's ligament and the iliac crests and held in place by elastic bandages reinforced by braces and stays.

A few years ago Gallant, of New York, published¹⁹ some original ideas on a new straight-front corset as an ideal orthopedic kidney support. He believes that the weight of the clothing and compression at the waist line at and after puberty have an important effect on girls in producing movable kidney.²⁰ He recalls fifty cases where he made careful measurements and found abnormalities in the length of the trunk, as shown by the distance between the suprasternal notch and upper border of the symphysis pubis, and the deviation from the normal relation between the circumference of the waist and hips at

the trochanters. There was a hollowing of the epigastrium and bulging of the hypogastrium. A respiratory rise and fall of the greater curvature of the stomach was observed in thin-walled subjects.

Displacements occurred frequently after child-birth, which could have been remedied by a firm abdominal binder and exercise while in bed. Prolapsus of the colon and stomach were generally associated with that of the kidney. These conditions were not remedied by operation. According to Gallant a properly shaped corset, put on before rising, in a semiopisthotonos position, makes the patient comfortable and prevents complications.

It remained, however, for Heath, of New York City, working along independent lines, to perfect the straight-front corset—a specially designed abdominal corset that meets the demand of physicians for one that will successfully support displaced organs. The Heath corset is built on specially designed lines, altogether different from all other corsets, and when perfectly (made to measure) fitted, lowers the waist-line in front, gives perfect freedom of movement to the entire chest-cavity, promotes deep breathing, and at the same time gives direct pressure and support from below upward and backward throughout the lower abdominal region, which not only reduces a large abdomen, but holds in place all prolapsed viscera.

With this corset there is absolutely no constriction at the waist-line, nor above; all the compression is across the hips and lower abdomen, which is lifted upward and backward, leaving the chest free, allowing deep breathing, permitting chest expansion, and favoring an erect carriage. The corset is made with a long graceful straight front which entirely covers the abdomen to the os pubis, at the same time adds support to the diaphragm, instead of breaking it down as do other corsets. The waist-line of this corset runs below the short ribs, which lengthens the waist, producing graceful lines without compression, encouraging deep respiratory movements with the effect of enlarging the bust measure and throwing the chest forward. The average reduction of the abdomen from the first wearing is from 3

to 5 inches and from 6 to 10 inches after the first month.

Rigidity instead of flexibility have marked every corset heretofore manufactured. This corset combines flexibility with elasticity, which permits it to yield to every movement of the body, leaving the organs of breathing, the stomach, the liver and kidneys, the uterus and appendages in their normal and natural position of unrestricted freedom. No woman ever thinks of loosening this corset or feels the need, when it is removed, of taking a deep breath. On the other hand, all women who practise tight lacing with the ordinary corset from the shops complain of pain on removing their corsets. Why is this? Because the pain is caused from the organs attempting to assume their normal position. This is the only surgical corset manufactured which reduces a large abdomen and holds in place all prolapsed viscera, and combines all the style and elegance of figure of the ultra-fashionable. As a surgical corset it is indicated in "floating kidney," enteroptosis, gastroptosis, dilation of the stomach, and for supporting the abdomen after laparotomy and parturition.

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USE OF FORCEPS IN COUNTRY PRACTICE

When to use the forceps and when not to use them;
the indications for the low and the high forceps operations; suggestions concerning technic and some cautions

By J. S. HIGGINS, Ph. G., M. D., Scipio, Arkansas

FORCEPS should only be applied in cases which are barred in some way; that is, that condition in which labor does not progress naturally and with the ease and rapidity that belongs to natural labor-cases, viz., when the pains flag and the woman becomes irritable or weakened by exhaustive efforts in bearing down; where the pelvis is abnormal or the woman is in a debilitated condition from disease or from other causes of any kind whatsoever; where the woman's system is saturated with uremic poisons and puerperal convulsions are imminent; in placenta prævia; with the fetus very large or the mother very small; where the cranium presses the obturator nerve for any length of time; where the pains are very severe and cause undue bearing down or the uterus is in an undue state of contraction and liable to cause rupture of the uterus; in hysterical patients or patients who have an abnormal condition of the vascular system; in tubercular patients and patients who have been accustomed to wearing corsets very tight.

Discretion is Necessary

Of course some discretion in the use of forceps must be exercised. The stages of forceps application are conceded to be three: low, medium and high or floating. It must be remembered that one cannot apply forceps unless the os uteri is dilated, but one may anesthetize the patient and dilate the os with fingers or dilators and then introduce the forceps. The operator must be sure not to catch the uterine walls in the forceps; if he does, there will be untold trouble and condemnation upon oneself, besides disaster to the patient.

The low application is by far the easiest and safest of all, when the head is ap-

proaching the perineum. The medium is not very hard, considering the difficulties experienced in the high. Of course the dangers attendant in the medium are increased as one goes up, and the high application is exceedingly difficult and dangerous. One had better be cautious and have another physician present at least.

High Forceps Operation

The indications for high forceps application are rare, however, and one usually has time to procure help, being careful to explain facts to the family, especially the husband. The patient should be given some anodyne to allay her pain while help is coming. This is for high or floating, but in any other the obstetrician is not excusable to wait, in emergencies, but must save the patient. Anesthetization of the patient must be begun by the doctor who later hands the inhaler to some one (the husband preferably), and then proceeds. The woman should be watched at intervals of one or two minutes by the accoucheur, who should be very cautious in the manipulations, the patient not being conscious of what is going on. Particularly must he be sure the forceps are properly applied and locked. Also must he proceed with caution, not letting the forceps slip, for they may cause extensive sloughing from traumatism. It is necessary to watch the perineum and not let it lacerate, if possible; if it tear it must be repaired at once.

A creolin douche afterward is advisable in order to disinfect any traumatism that may exist. The patient must be instructed not to touch herself with her fingers, as it may cause sepsis. Bed and patient must be kept clean and dry and much trouble will be avoided in the outcome at least.

--- SURGICAL THERAPEUTICS ---

INTUSSUSCEPTION

Nothing but operative treatment is to be advised in these cases; but when the parents will not consent to immediate abdominal section, the surgeon may still do something while waiting. But, first of all, he should freely explain that early surgical interference is indicated in order to free the bowel from a position which threatens to render it necrotic by disturbance of the mesenteric circulation; this nutritional disturbance of the bowel, due to occlusion of the mesenteric vessels, must be relieved as soon as possible before the infection of the peritoneal cavity promptly annihilates the results of the operation. But, before urging operation, the doctor must be pretty sure of his diagnosis, since it is humiliating to be discharged and have some "granny" cure the patient by a simple enema.

The diagnosis of intussusception is easy. It depends upon feeling the "lump" of the invagination, and the passage of bloody mucus per anum. But the examination of the abdomen should invariably be conducted under general anesthesia. The most important therapeutic indication consists in the reestablishment of the obstructed mesenteric circulation. It is to be then explained to the friends that all internal therapeutic measures are to be rejected as inadequate to deal with the condition of the incarcerated segment of the bowel. As soon as the diagnosis is positive, laparotomy should be performed, because this form of treatment alone can be relied upon to reestablish normal conditions.

Disinvagination was always accomplished by gradually crowding the invaginatium from the tip through the entire sheath of the invaginations, using the thumb and index finger of both hands. After the invaginated bowel segment has been reduced, bit by bit, through these manipulations, cautious traction may be employed for the purpose of

determining that the surfaces of intussusceptum and intussusciens slip smoothly by each other. It is a serious mistake, however, to attempt the reduction of the invagination only by means of traction, because the mechanical conditions of the intussusception are not recognized in this manipulation. The outcome of a given case depends not alone upon the duration of the intussusception, but also upon the degree of the obstruction of the mesenteric circulation.

Opiates should never be given; nor on the contrary, should physic. But the lower bowel should be washed out repeatedly with warm water to which has been added a little soap and glycerin. Then the anesthetic is administered. If the diagnosis is then sure, operation should be urged; if refused it is far better to withdraw from the case than to continue—to sign the death certificate.

TREATMENT AFTER KIDNEY OPERATIONS

Three things are prominent after kidney operations, as nephrectomy: vomiting, pain and drainage. The first two may be controlled, usually, by hypodermics of hyoscine hydrobromide (gr. 1-100) and morphine (gr. 1-4) every three to six hours, this combination being better than plain morphine, which has a tendency to check urine secretion; and 1-100 grain of digitalin may be added with advantage. Immediately after operation (when the pelvis of the kidney is opened or the kidney removed) the temperature rises to 104° or 105°F. in a few hours, but it usually drops to normal as soon as the opposite kidney begins to functionate actively. Should the temperature become subnormal and vomiting persist, acute sepsis is coming on and must be combatted earnestly, with particular attention to elimination and to drainage. The bowels must be kept active

and perspiration induced (pilocarpine hypodermically and much water by mouth.) The wound is best opened up widely even if it has been partly sutured, washed out and packed with gauze.

TREATMENT AFTER BLADDER OPERATION

Since postoperative anuria is more likely to occur here than in any other one may give a liter (one quart) of normal salt solution by hypodermoclysis immediately after the patient is returned to bed; and especially so if there be much shock. As soon as possible, too, as much water as the patient can drink should be given. When suprapubic cystotomy has been done the urine is usually carried away by a long rubber tube, but there is much leakage around the opening so it is necessary to change the gauze two or three times a day; and if there be much irritation of the bladder (or cystitis) it is best also to wash out the bladder at the same time, using a saturated solution of boric acid. The irritation of skin is not as serious as in perineal cystotomy but sometimes requires careful attention.

When the bladder has been sutured and the abdominal incision closed the wound requires no attention until the time to remove the sutures (ninth or tenth day) provided the gauze does not become soiled with urine.

But as it is always necessary to use the catheter every four hours for a week, in such cases, the dressings usually become sufficiently infected to demand several changes; the layers next to the incision being untouched whenever possible. With all the drainage-cases a rubber sheet must be spread upon the bed and soft pads laid over it to catch the urine, these being changed as often as possible. For if the patient's skin is not protected from the irritating effect of constant immersion in urine, bed-sores of the most aggravated kind may form. To assist in preventing this calamity the back, hips and thighs ought to be bathed in diluted alcohol once every day; and may be smeared with vaseline after each alcohol-bath. As soon as the strength

will permit the patient must be compelled to sit up in a chair daily, upon a rubber ring, for as many hours as possible. In perineal drainage there is likely to be a considerable destruction of tissue by necrosis—the urine getting into the muscular and fascial layers in spite of anything that can be done. These sloughs must be cut away from time to time, but not too soon; often it is best to wait several days before pulling them out. After granulation is well established there will be no further trouble, but with old people the process of granulation is not progressing satisfactorily even after two or three weeks, sometimes, and the continuation of necrosis becomes a serious menace. Here the free application of iodoform may be tried, or balsam of Peru smeared into the depths of the wound. It requires from two to four weeks for the bladder to close—and occasionally there is some leakage for many weeks.

PLEURITIS

Pleurisy becomes a surgical disease as soon as it is apparent that the effusion is not being absorbed or that the serum is infected with pyogenic bacteria. When it is decided that the serum accumulated in the pleura is to be evacuated the skin must be scrubbed carefully with soap and water; a few drops of cocaine injected beneath the skin and into the intercostal muscles, but *not* into the pleura; a large aspirator-needle is boiled for at least ten minutes; the skin pulled a little upward or downward and from over an intercostal space and the needle thrust quickly and directly into the pleural space. A boiled stylet must be at hand to push through the needle from time to time if it become clogged by flakes of lymph. The fluid must be allowed to escape slowly so that the lung may expand (if adhesions have not formed).

When all has been withdrawn, the needle is taken out by a short, quick jerk and the skin allowed to slip over the opening. A little piece of gauze may be placed over the skin-puncture and held in place by a strip of adhesive plaster. When pus is present the

operation of choice is the Estlander for children: removal of a small part of one rib, or even a mere slit in the parietal pleura sometimes effecting a perfect cure if the subsequent dressings be made with sufficient care as to asepsis; for adults the Schede operation (excision of the chest-wall, including the parietal pleura, over at least one-third of the entire side affected) is the only one which promises complete cure, since it permits the skin and muscles to fall in on the visceral pleura and so obliterate the huge pus-sac. It is remarkable how much the lung will expand after such a formidable operation. The most energetic antituberculous and tonic treatment must be kept up for months.

RICKETS

There being in this interesting disease of early childhood a deficiency of the elements which should enter into the formation of bones—that is, a “bone-salt starvation”—the great indication aside from proper food is to supply the deficiency. Phosphide of zinc is highly praised; from one milligram to one centigram (gr. 1-67 to gr. 1-6) three times a day, according to age and the way it is borne.

In rickets there is always a tendency of the digestive apparatus to fail in its function, so great care must be exercised not to give zinc, lime, etc., in doses too large to be accepted by the stomach and bowels without irritation. The syrup of the lactophosphate of lime is a most praiseworthy preparation; but some children cannot take it for any great length of time; it may be tried in doses of a half teaspoonful thrice daily with a child of two or three years. On account of this tendency to stomach irritation, too, codliver oil cannot often be given, though the most eminent authorities advise it, rich cream does better; when anemia is marked and there are evidences of tuberculosis (formerly called “scrofula”) forced feeding may be necessary with the exhibition of syrup of the iodide of iron; one drop three times a day being better than larger dosage.

If there is the slightest tendency to constipation (as when the patient is taking iron) laxatives must be ordered at bedtime, preferably phosphate of sodium. Phosphorus (or the phosphates) must be given freely on account of the influence phosphorus has upon the growth of bones. One or two decigrams of phosphate of lime (1 to 3 grains) may be given in milk three times a day without the knowledge of the child. Baths followed by massage are excellent, but care must be exercised not to bathe the patient too frequently since hot baths weaken to a marked degree—and in these cases every energy must be directed toward building up the patient. If there be a marked tendency to bending of the legs, the little patient must be kept, as much as possible, from walking. Outdoor life is indispensable; and this is true of good food also.

CANCER OF THE STOMACH

Nobody now doubts that cancer of the stomach can be cured by early operation; the only trouble is, (a) recognizing the character of the affection early enough and (b) securing consent of patient for operation. Anent the first part Aldor speaks highly of three laboratory methods which have been carefully tested by him. Salkowski's method of determining the presence of albumose in the urine is regarded as a great help in these cases. In forty carcinoma cases 56 percent showed the presence of albumose. While the mere presence is not significant of carcinoma, nevertheless its constant presence is of great significance. Solomon's method of determining the presence of nitrogen in the carefully washed stomach is also regarded as valuable in recognizing the presence of an ulcer, not necessarily, however, of a malignant type. Lastly, concealed hemorrhage is of great importance and when suspected the patient should be placed in the hospital, where a careful diet can be carried out for some days before any conclusions can be drawn from the positive findings. Aldor emphasizes the fact that while these three methods in themselves are not of great

diagnostic value, they may lead to a very early diagnosis when all three are present together with other symptoms.

TREATMENT AFTER OPERATION FOR HEMORRHOIDS

When piles have been removed by either ligature or clamp and cautery the sphincter having always been forcibly dilated prior to operation it is imperative that the rectal packing extend very high into the gut and that it be tamped in very tightly. This pack is, preferably, iodoform gauze, though dry bichloride gauze will do. Over this a pad of absorbent gauze or cotton is placed, held by a T-bandage applied tightly. The outside gauze may be changed every day, if

desired, but the packing must not be disturbed for from four to six days, during which time peristalsis is to be controlled by opium or morphine by the mouth. When accumulation of gas becomes distressing, however, the plug must be removed and the bowels permitted to move. In many cases it is best to give a good saline laxative and let the bowel-movement force the packing out—assisted by the patient's own fingers, as this will cause far less suffering than if removed by doctor or nurse. If it be left until the fifth or sixth day, however, it usually slips out without much discomfort. An enema should be taken immediately after the first bowel-movement, and this should be repeated daily thereafter for at least a week.

GYNECOLOGICAL THERAPEUTICS

GONORRHEA IN WOMEN

For the vulvovaginitis due to Neisser's coccus one may use an injection twice a day of a quart of 1 in 2000 or 1 in 4000 solution of potassium permanganate in hot water, followed by a solution of mercury bichloride, 1 in 2000, and a dressing of 5-percent ichthyol in glycerin. Resorcin, in doses of 1 gram (15 grains) may be given internally, three times daily, with advantage. Twice a week silver nitrate, ten grains to the ounce of water, should be used to swab the mucous membrane, and following this, a powder of alum, 3 parts, tannin, 2 parts, should be insufflated. Frequent bathing and other hygienic means should be employed. If there is complicating cervicitis and metritis, dressings of ichthyol, 10 parts; iodoform 5 parts; glycerin, 200 parts, should be used. Local applications of tincture of iodine or of zinc chloride, 1 in 50, may be employed, and intrauterine injections of about 1-2 ounces of the following solution: alum, 2-2 parts, tincture of iodine and alcohol, each 25 parts. Urethritis should

be treated by the balsams, the alkalis, and by irrigations of silver nitrate or protargol solutions, or a 1-percent aqueous solution of thallin sulphate.

ARTERIOSCLEROSIS OF THE UTERUS

Persistent metorrhagia not dependent upon fibroids, cancer or gonococcal or syphilitic infection is not common; it may be due, rarely, to chronic metritis with arteriosclerosis. Treatment is of no avail (save hysterectomy), except in the lighter forms of the nonsenile variety. At times rest in bed and regulation of the intestinal tract is sufficient, since such treatment relieves the congestion of the pelvic organs. Occasionally swabbing out the uterine cavity with ferric chloride is of value, in the meantime repeated vaginal tampons being employed. Ergot is entirely unsatisfactory since it is impossible for this drug to bring the rigid vessel-walls into contraction. For the same reason curettage is of no avail. Indeed in arteriosclerosis of the uterus all methods of treatment but one have proven to be useless

In spite of everything the menorrhagia becomes steadily more marked, the intermenstrual periods become shorter and shorter until the hemorrhage is more or less continuous. Hence one should not put off too long the one certain method of cure—total extirpation of the uterus. Nor should this conclusion be difficult to decide upon, since most of the women already are approaching the menopause.

GARRULITAS VULVÆ

This term has been used to express that condition of the vagina and vulva in which air is expelled audibly from the vagina, from time to time, giving rise to a suspicion of the existence of rectovaginal fistula. In most of these cases examination will show the introitus to be large and lax, with a moderate degree of prolapse of both anterior and posterior walls of the vagina. The perineum is always intact.

If the patient be requested to lie on her back with her knees drawn up and her arms placed above her head, by introducing the finger into the vagina, it will be found that the vagina fills with air on taking a deep inspiration. The same result will be noted when she is placed in the knee-elbow position. This can be repeated as often as one likes; on expiration, a loud noise will be produced by the air passing through the vulva. This will prove that the trouble is not due to gases developed in the vagina, the repetitions within a short time being impossible if such were the cause.

Most authorities now agree that garrulitas vulvæ is produced by a laxness of the vaginal walls, and especially of the posterior wall, and also of the abdominal walls. While the skin of the perineum may be intact, it often has been ruptured at a previous confinement, and only the superficial tissues have been repaired. The condition is much more common in multiparæ than in nulliparæ. It is not so uncommon as usually believed; only the majority do not like to complain of the symptoms to their doctor. It is more common among the poorer classes

than among the more wealthy. Ordinary treatment, such as douches containing astringents, fail—the only cure being a close colpoperineorrhaphy. The posterior walls must be sewed up very tightly, with a large perineal body built up from bunching the vaginal mucous membrane over the levatores ani and transversi perinei which are carefully brought together by the Tait method of perineorrhaphy.

COLORLESS IODINE

When patients object to the discoloration of skin produced by painting with tincture of iodine, as in the treatment of goiter, it is very easy to make colorless iodine, and make it instantly, without waiting a minute for the change:

Tincture of iodine ... 24.0 (drs. 7)

Aqua ammonia..... 6.0 (drs. 1 1-2)

Carbolic acid..... 1.0 (drs. 10 to 12)

Shake well and wait just a moment and all color will be gone. The therapeutic value is not seriously affected.

RETRODISPLACED GRAVID UTERUS

In a recent article Dr. C. W. Barrett, of Chicago, calls attention to the fact that with the onset of pregnancy a retrodisplaced uterus should be returned to normal position as soon as possible, and supervised during the early months of pregnancy. An irreducible retrodisplaced gravid uterus may be given time to raise out of the pelvis with growth if symptoms of early or late incarceration do not present. An irreducible retrodisplaced gravid uterus that shows early symptoms of incarceration which might lead to abortion (or late incarceration, with its attendant evils) should be replaced by means of a celiotomy; the complications should be dealt with, and a radical operation should be performed to permanently cure the retrodisplacement.

Cases of late incarceration may be met in which gangrene, septicemia, peritonitis, uremia, etc., may contraindicate celiotomy for replacement and in which drainage of the bladder, drainage of the peritoneum,

emptying of the uterus, or hysterectomy may be indicated. The latter cases, now uncommon, will be rare indeed if the former teaching is generally accepted. Careful celiotomy will seldom be the cause of abortion, but abortion will sometimes follow the operation as a result of the incarceration. This, instead of contraindicating an operation, points to the necessity of earlier operative measures. This earlier resort to operative treatment appeals to the judgment of the patient and the physician when it can be shown that a radical cure of the displacement and its complications is feasible.

UTERINE DEVIATIONS

Dr. Lucy Waite, Chief Surgeon of the Mary Thompson Hospital, Chicago, from an analysis of 3000 cases of uterine displacement reaches the following conclusions: (1) The normal position of the uterus is one of passive mobility, and a non-metric, freely movable uterus may lie in any position in an otherwise normal pelvis without producing symptoms. (2) Uterine deviations are pathological and can be correctly designated displacements only when the uterus is permanently fixed in any given position or its normal mobility compromised. (3) When retrodeviation of the uterus is found in any given case of pelvic disturbances, further investigation will reveal complications which have produced the symptoms. (4) Diagnosis of uterine posi-

tions cannot be made from symptoms. (5) Menorrhagia, chronic backache, constipation and pelvic pain are in no sense classical symptoms of retrodeviations of the uterus, being found in a large percentage of cases of anteplaced uteri and are due to complications, regardless of the position of the uterus. (6) Dysmenorrhea, sterility and vesical irritation are not classical symptoms of antelexion, as commonly taught, the dysmenorrhea and sterility being due to the accompanying myometritis, ovarian and oviductal irritation, to an accompanying cystitis, the bladder being involved in the general pelvic inflammation. (7) Many cases of dysmenorrhea are a pure neurosis, the accompanying flexion being only a coincidence, and gynecologists must extend their observations beyond the pelvis if they wish to discover the true etiology of many symptoms which manifest themselves most prominently, it may be, in the pelvis. (8) The principal factor in the causation of fixation of the uterus is the peritoneal perigenital adhesions. The uterus may be fixed also as regards the relative position of the body and cervix, by inflammation of its own tissues, myometritis. (9) The rational treatment in any given case is to treat the complications which are in reality responsible for the symptoms, leaving the liberated uterus in its original state of anatomical and physiological mobility. (10) Fixation of the uterus by surgical intervention is therefore only substituting one pathological condition for another.

GENITOURINARY THERAPEUTICS

TREATMENT OF NASAL SYPHILIS

After referring to the importance of a direct diagnosis of nasal syphilis, Dr. M. C. Morris states that to check promptly the progress of the disease, whose destructive ravages have such an important influence on the entire future life of the patient, internal treatment alone is not sufficient; local appli-

cations to the nose and inunctions of mercury to the body are necessary. The oleate of mercury should be applied to the thinner parts of the skin, in various parts of the body. The nasal organ should be cleared of the contained crusts at least a half hour being taken for this one task. Using a soft-rubber bulb syringe or a Birmingham douche, the crusts should be thoroughly

soaked with Dobell's solution. When the crusts have become soft they may be removed with angular forceps. After all the large crusts have disappeared the small crusts, and any dried secretion or mucus, may be removed with a cotton applicator. Then a careful search for any denuded or loosened bone should be made. After cocainizing, probe the nose and detach and extract any loosened bone. If the sequestrum is too large to remove, it may be crushed with forceps. After the above treatment the inflammation will rapidly subside. Any remaining particles of pus are destroyed by hydrogen peroxide, upon a cotton applicator. Then an application of 1 dram of silver nitrate to 1 ounce of water should be made, the whole ulcerated area being attacked. Complete the dressing with the insufflation of an iodoform mixture as follows:

Morphine sulphate.....	grs. 2
Iodoform	grs. 30
Tannic acid.....	grs. 30
Bismuth subnitrate.....	drs. 2
Acacia	drs. 2

The patient should be directed to syringe the nose constantly—twenty to thirty times daily—with Dobell's solution, and should be treated daily for several days as above if a permanent cure is expected.

A CASE OF GONORRHEAL OTITIS

Dr. Reinhard reports a case in an infant twenty-four days old. The child had blennorrhea neonatorum and also a severe purulent discharge from the right ear. The discharge showed gonococci both microscopically and in culture. The nose and pharynx were free. Treatment with dry powders had no effect, but irrigations with a 1:5000 potassium permanganate solution, followed by instillations of a 1-percent protargol solution, brought about a complete cure in a few days.

INTERNAL TREATMENT OF SKIN DISEASES

Dr. W. R. Dalton (*J. A. M. A.*) is convinced that hyperacidity, induced by faulty digestion and intestinal fermentation, is the

sole cause of a great many skin diseases. While he uses local treatment in every case, he uses it simply as a palliative to relieve distressing symptoms and does not rely upon it as formerly. His chief reliance is on internal treatment, and the combination that gave him the most excellent results is as follows:

Naphtalin	gr. 1
Ipecac	gr. 1
Charcoal	grs. 1 1-2
Arsenous acid.....	gr. 1-100
Calomel	gr. 1-100
Strychnine	gr. 1-100
Pilocarpine	gr. 1-100

The naphtalin and charcoal are antiseptics and inhibit the action of microorganisms through the ileum and large intestine; the calomel, whether a cholagog or not, destroys the bacterial forms in the duodenum and jejunum; the pilocarpine and ipecac exert their action upon the sweat-glands and lymphatics, while the strychnine acts as a tonic to the vasomotors and the whole cutaneous nervous system. Constipation must also be combated, so the author generally follows the tablets by magnesium sulphate, lithium carbonate and sodium phosphate in an effervescent form, in the morning.

VENEREAL PROPHYLAXIS

Social "purists" declaim against anything in the way of public discussion of sexual subjects. Yet the widespread disaster from gonorrhea (not to mention syphilis) with its alarming influence on diminution of the birth-rate must make all thoughtful physicians agree with Dr. Denslow Lewis, of Chicago, who declares that the time has come for general instruction of the public as to the rational prophylaxis of venereal disease. Much of this instruction must be given by the physician; and fortunately several of the great medical societies have become enough awake to this matter to appoint committees for devising means for this public education.

Professional as well as lay sentiment must be created which will allow of and demand

such instruction in the daily press, which has always refused to consider such articles as publishable. The rules of the post-office department as to the transmission of "obscene literature" by the mails are so inexact and so contradictory that it is difficult to transmit such information without being arrested and fined as a sender of "obscene literature"—however pure its object may be. These laws should be amended so as to make it possible for responsible physicians to transmit and publish such information without danger of being held responsible to the postoffice authorities.

Some may question Dr. Lewis's declaration that there should be some sort of registration and examination of prostitutes, not the European system of legalization, but such a system as shall oblige the examination of prostitutes by the proper authorities so as to prevent them from propagating venereal disease, but no practitioner of much experience can dispute the necessity of some sort of restriction. We must teach the hygiene of sexual life to children and to parents. Thus, abortion, illegitimacy, and infanticide, as well as venereal disease, will be limited. Every school should teach it by means of properly instructed teachers or physicians. Prophylaxis in children should be favored by the removal of all sources of irritation about the genitals. The boy and girl as well should know the truth about sexual matters, and not learn it in a garbled way from associates. Women's clubs, secret societies, and gatherings of women are appropriate places for the instruction of parents.

GONORRHEAL EPIDIDYMITIS

According to Edwards the treatment of epididymitis is the easiest of all the complications of gonorrhea. The severity of the symptoms depends in great part upon the patient himself: The nervous and high-strung patient will of necessity need more attention than his brother who is stoical and bears his pain philosophically. Absolute

rest in bed is the first indication both for the comfort of the patient and to prevent irritation which might lead to suppuration or tuberculosis of the testicle. A brisk cathartic should be given, preferably 5 or 10 grains of calomel, followed by Abbott's saline laxative.

The affected testicle is to be put at rest. Several methods have been proposed, but the most convenient is a roll of ordinary cotton placed snugly between the thighs; though a good way is to apply a wide strap of adhesive plaster and suspend the testicle on this, but these are liable to become cumbersome and uncomfortable. After the scrotum is properly elevated, hot applications are to be made, preferably with cloths saturated in hot water, to which may be added tincture of opium and Goulard's extract, all covered by gutta-percha or oiled silk. A hot-water-bottle will keep the applications hot for some time. A tobacco poultice, made by adding 1 1-2 ounces of fine-cut tobacco to a pint of hot water and flaxseed, quantity sufficient to make a thick paste, will sometimes give relief, especially to those who are not tobacco users.

For the extreme restlessness and sleeplessness nothing better can be used than opium in some form, preferably codeine, 1 1-2 grains, with acetphenetidin, 5 grains; one of these powders can be given every three hours. The hot applications should be kept up for four or five days, after which guaiacol may be applied in the shape of the following ointment as proposed by Casper:

Ichthyol.....	2.5
Guaiacol.....	5.0
Mercurial ointment.....	10.0
Petrolatum,	
Wool-fat, aa. q. s. to make.....	.600.0

The ointment is to be applied on gauze and then covered with nonabsorbent cotton. This may be continued for a day or two, when the patient is allowed to leave his bed after having been fitted with a proper suspensory.





GLEANINGS *from* FOREIGN FIELDS

TRANSLATED BY E. M. EPSTEIN, M.D.



MASSIVE AND ALKALOMETRIC DOSES

The theory of the large as compared with the small frequently repeated dose, with the advantages of the latter explained from a new point of view

AN objection is frequently brought against the dosimetric method which at first sight seems well taken. It is said that "this system" renounces the effect of the massive dose. The large dose given at long intervals has an effect which feeble doses at short intervals have not, and this is true even when the sum of the doses given dosimetrically in the same unit of time equals or even exceeds the total of ordinary doses."

I say "ordinary" and not "allopathic" intentionally because this last term does not deserve to have a place in the contemporary scientific vocabulary. What is really an allopathic dose? Etymologically it means a dose capable of producing a disease other than the one which one desires to combat. But does this concept correspond to fact? When I give digitalin to a pneumonia patient, or a salicylate to a rheumatic, or mercury to a luetic, or caffeine to an asthenic, have I then the intention to produce an anti-rheumatism, an antipneumonia, an anti-syphilis? Not at all! I simply modify favorably the circulation of the blood or the influence of the nervous system, or I paralyze or kill the spirochete, that is all, and I am not on that account a pathogenic manufacturer. This word "allopathy" is a concession made to homeopathy. But to oppose one doctrine against another is equal to recognizing the latter.

There is only one medical practice, and that is based on observation and experience, the only source of truth and of all science, as Poincaré has said. The word "allopathy" corresponds to nothing, and it has its place only on the signboard of the drug-shop to say antithetically that it is not a homeopathic one. This word is repudiated by scientific medicine, and it has only one use, to recall the worst time of the lamentable crisis which medicine has had to pass through. This evil memory antedates Burggraeve, Pasteur, Claude Bernard, Roux, Behring, and all the rest of experimenting physicians. Why then burden science any longer with a name that has, thank God, no merits, and why retain it in our writings?

The objection referred to above has turned away many a physician from alkaloidotherapy. And yet this fact of renouncing the effect of the massive dose is precisely that which confers upon our method its security and charm. It is just this that I desire to show here, and to do which it is necessary to recall to mind the affects of massive doses physicochemically considered.

The molecules of a substance which are dissolved in a solvent conform to the kinetic theory of gases. The atoms and the molecules which constitute the gases are separated from one another and move in straight lines. In a gas at rest, that is in equilibrium, all the molecules and all the directions of the

movements which animate them are uniformly distributed in the space in which they are disposed. The molecules making up a volume cannot, therefore, move in a more diversified way without clashing. These clashings must modify continually and ceaselessly the directions which the molecules follow. That such modifications may not disturb the equilibrium of the gas it becomes necessary that the speed of the motion impressed on each molecule do not change. For this it suffices that each molecule preserve intact both its energy and its center of gravity.

All the molecules which strike the walls of their container are started back again by these walls. The impact exercised by the molecules on the sides of the vessel constitutes the pressure of the gas. The molecules which strike mutually against each other in the gas itself only change their speed without losing any of their energy. If this were not the case, if the impacts did not happen with perfect elasticity, then the energy lost by the molecules would be transformed into heat. This last might be possible, but it never was observed.

The speeds which animate the molecules vary much, but the result, their sum, remains always the same, in conformity with the hypothesis mentioned above.

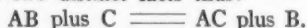
The substances dissolved conform exactly to the kinetic theory of gases. The pressure which they exercise on the sides of their container constitute the osmotic pressure, and the movements of their molecules explain exactly that which is called "affinity" in this way:

Let two bodies, AB and C, in solution (*corpora non agunt nisi soluta*: bodies do not act unless they are dissolved) act upon each other according to the equation: AB plus C equals AC plus B (1).

At the same moment when AB and C are put in the presence of each other the masses of AB and C are very great, while those of AC and B are very small. In proportion as the reaction is being accomplished the masses of AB and B go on augmenting at the expense of the masses AB and C. The result of this fact is that the tendency of

AB and of C to react upon each other goes on without ceasing or diminishing. Simultaneously AC and B endeavor continually to decompose each other according to the equation: AC plus B equals AB plus C.

We have thus before us two distinct phenomena, expressed respectively by the equations (1) and (2). The notation introduced by Van 't Hoff allows us to express these two distinct facts thus:



We have seen that the two dissolved bodies conform to the kinetic theory of gases, their molecules move, therefore, without ceasing. In order that the molecules should react upon each other it is necessary that they should reciprocally collide against each other. And the number of collisions producing this reaction will increase with the number of molecules contained in a given unit of volume. This number of collisions is therefore directly proportional to the concentration of the solution, i. e., with the mass of active bodies contained in a unit of volume. And the speed also with which the reaction is accomplished is proportional to the mass. *The mass, therefore, governs both the affinity and the promptitude of the chemical action.*

It results from all these, for instance, that the force of an acid is directly proportional to the number of negative H ions contained in a volume unit, and again, the force of a base is also directly proportional to the number of positive OH groups (hydroxyl ion) contained in a volume unit.

It is evident that in order that the effects of the mass may be produced it is necessary that the bodies in the presence of each other should be dissolved and uniformly distributed in the solvent. And now, the alkaloids that are dissolved in the blood-plasma are at first fixed provisionally by the lecithins of the blood-corpuscles, then the latter transfer these alkaloids to the blood-cells which abstract from the blood by a sort of election just those bodies which are suitable for their groups of fixators.

The actions of the mass due to the molecular collisions, the formula of which could be expressed mathematically, are in no way comparable with the vital phenomena of

cellular absorption. The simple fact that the cells in question are fixed takes away any value that might be derived from comparing the two processes. Recalling the objection which was referred to in the beginning of this article, we see then that it is without foundation and importance. Alkalometry does not renounce any useful action in passing by mass-action, rather the contrary, for in doing so it acquires more security, and for this reason: The absorption of an alkaloid by fixed cells is continuous. In analytic geometry this would be expressed by a straight line. The passage of an alkaloid from the gastrointestinal tube into the blood occurs rapidly, say in ten or twenty minutes. This phenomenon could be expressed by a sinusoidal line, i. e., a wave-line on an axis. Straight and sinusoidal symbolize two simultaneous phenomena, as the illustrations graphically represent.

FIGURE I

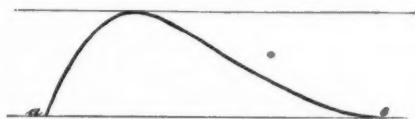


Figure I may represent the action of a massive dose at long intervals. The line AB represents the sudden powerful action of the massive dose starting at the base A and reaching its acme at B to perhaps an undesirable toxic effect, and then slowly descending from the acme at B and reaching to its minimum or nil effect at C. At C the process will again have to be repeated with the same unequal effect upon the patient.

FIGURE II



Figure II represents by a similarly shaped but shallower curve the effect of the minimum dose administered at short intervals. Starting at A the effect of the dose is reached at B, and thence the effect begins to diminish and would have reached its minimum or nil effect at C, but the next dose given at D crosses the line BC at E, and there its effect strengthens the effect from the first dose and reaches its own acme at B; and so the minimum doses represented by the repeated curves sum up till the desired therapeutic effect is obtained. The doses and the intervals being the same, we may represent by the lines FG at the acmes and HI through the intersections as continuous uniform lines of action till the desired effect is obtained and the remedy ceases to be given.

Fig. I shows that the quantity of alkaloids which is taken up in the torrent of the circulation varies a great deal with the large dose at long intervals at a given time. This variation is far less with the small dose at frequent intervals because the line which ex-

presses it is a sinusoidal one of very slight elevations and of small distances one from the other. This concentrated quantity of the massive dose puts the fixed cells under the liability of a too great absorption at one given period, and of a too feeble absorption at another given period of time, an absorption which is capable of producing an inhibition or even bring on 'definite intoxication. [My friend, Dr. Paxton, contributes the illustrations for this article.—THE GLEANER.]

Experience confirms what was said above. In alkaloidotherapy the massive dose does mischief and discredits our method, while the feeble dose at continual thrusts gives always invaluable services, and this is just what we want. "Gray are all theories, my friend, dull and empty," said Goethe, "experience alone is a star full of life."—(Dr. Robert Tissot, in *La Dosimetrie*, Oct. 1907.)

CALOMEL: WHAT BECOMES OF IT AFTER INTERNAL ADMINISTRATION

M. H. Nemser reports the results of his observation, in the *Chemische Zeitung* of 1906, as follows: In its progress through the gastrointestinal canal calomel is dissolved in various proportions in different places. The gastric juice and contents showed themselves as least effective and this despite the free acid present in the stomach. The solvent action begins strongly in the duodenum and reaches its maximum in the ileum. In the colon the dissolved mercury is either absorbed or the mercury is precipitated from it by the hydrogen sulphide present in the colon, so that no dissolved mercury is found in the colon. The absorption of the mercury begins in the ileum, and is completed most likely in the upper portions of the colon. A considerable portion of the ingested calomel is retained for a long time in the liver, kidneys and colon, a fact which is not without significance. The said organs show a specific affinity for calomel, which affinity is observable in the stimulation it produces to increased functional actions.

The calomel taken into the stomach does not therefore pass out completely with

the feces, but remains in the organism in part, and is the cause of its specific action.—*Pharmac. Centralh.*, No. 24, 1907.

PHYSOSTIGMINE

An alkaloid derived from the African calabar, or ordeal bean, which is the seed of the *Physostigma venenosum*. It is also called eserine. It is of a very complex composition, and its salts are easily decomposed in a watery solution, developing a red color. It is an intense poison. Its effect extends first to the many organs that are provided with smooth and striated muscular fibers, and also to certain glandular organs, all of which this poison generally irritates. Formerly it was thought that the irritation affected the muscular fibers themselves, but at present there is an inclination to regard the irritation of the poison as affecting the terminal distribution of the nerve-fibers to the muscles and glands. It is not definitely settled whether the beautiful crystals of physostigmine salicylate of the pharmacopeias are identical with the original physostigmine that was obtainable only in an amorphous combination.

The effects of physostigmine, especially that prominent stimulating effect which it has upon the heart-muscle, would make it excellently available for medicinal purposes were it not that it has at the same time an exceedingly violent effect upon the central nervous system which is eminently perilous to life. For this reason the remedy is at present limited almost wholly to external use, while formerly the unreliable extractive preparation from the bean was used internally, as for instance in tetanus neonatorum.

The remedy is of great value for the eye specialist as a miotic which by repeated instillations contracts the pupil even when moderately under the dilating influence of atropine. It is also useful in tearing up posterior synechia, also to prevent prolapse of the iris or to reduce it when prolapsed, which may happen in operations on the eye. The most important services of physostig-

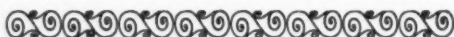
mine is in glaucoma, for its power of contracting dilated blood-vessels can be used in that disease to reduce the internal pressure of the eyeball by contracting its dilated blood-vessels and thus save the eye in many instances. The use made of the remedy is external only, also in poisoning with atropine and similarly acting alkaloids.

Physostigmine salicylate consists of colorless or yellowish, glistening, small crystals which are soluble in water, the solution becoming reddish after some hours and losing in efficacy, hence must not be kept too long. It is used for instillation into the eyes. (1 : 500 up to 200 parts of water.) Maximal internal dose is from one to three milligrams (0.001 to 0.003), and for children from 1-40 to 1-20 of a milligram (0.00025 to 0.0005).

Physostigmine sulphate is more soluble in water, not distinctly crystallized, and is used mostly in veterinary practice.

Physostigmine Poisoning.—Since the use of the remedy became more limited to external applications the poisoning accidents with it are rarely met with now, either in medical practice or otherwise. Yet caution should be observed in its external use as well, for absorption is not excluded. A few milligrams in an adult, and half a milligram in a child, can have bad consequences. The first toxic phenomena, apart from pupillary contraction from local application consist in an increase of secretions, vomiting, diarrhea, intestinal spasm, colics, tenesmus, cardiac palpitation, slowed pulse, then also violent muscular twitchings, spasms, psychic excitement, dyspnea, etc., and finally paralysis of respiration.

The treatment, apart from the exhibition of evacuants, has to be directed to artificial respiration or oxygen inhalation. As an antidote atropine hypodermically and in not too small doses is recommended, which however cannot be designated as a perfect antidote to physostigmine. Muscular cramp can be stopped with curare, but the danger is in impairing the breathing.—(Harnack, "Enzyklopaedie der Praktischen Medizin.)





FACTS CONCERNING BOWEL DISINFECTION

Some essential, fundamental things, which too often are overlooked, and which are worthy of repetition and emphasis. The importance of disinfecting the stool and how to do it most effectively

THERE are several points which we wish to reiterate to our readers on the subject of disinfecting the alimentary canal. The first is that it is simply preposterous to attempt to do this with any chemical disinfectant so long as the bowel is occupied by decomposing fecal masses. No known agent that could possibly be employed here would permeate these masses and destroy the microorganisms or neutralize the toxins which they contain. It is therefore absolutely necessary to first empty the bowels; and so long as this is not done, so long as a single fecal mass remains enpouched somewhere along the large intestine, it will be impossible to accomplish our object. Let us begin therefore by attending to this matter, and attending to it thoroughly.

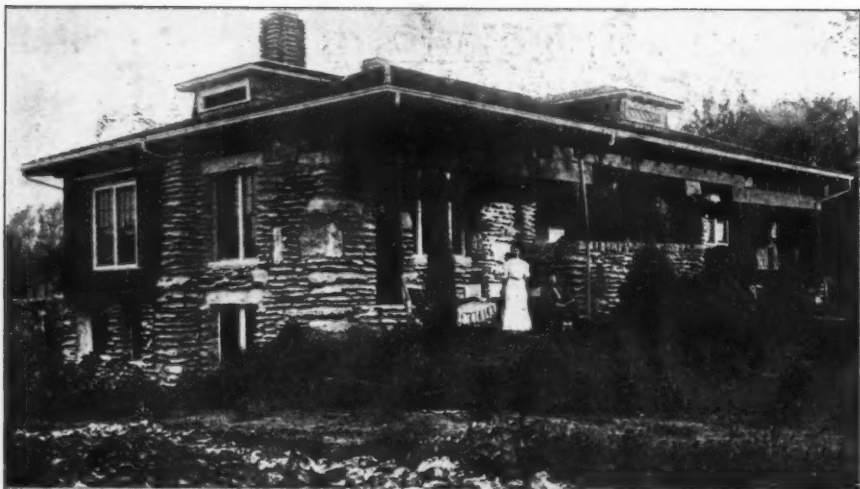
This being done we may then begin to give the "intestinal antiseptics" in suitable doses, say from five to ten grains every one, two, three or four hours according to the urgency of the case. How long should this be continued? We ourselves have inadvertently stated, "until the stools are inodorous;" but on its face this is a mistake. Normal stools are never inodorous. Abnormal stools are abnormally offensive. The remedy should be continued until odor is reduced to what may be considered normal.

When the "intestinal antiseptic" (W-A) is employed we may utilize Bouchard's acute

observation. The bismuth these tablets contain will continue to form bismuth sulphide and blacken the stools, so long as the sulphides are present in the alimentary canal. When the disinfection is complete and the sulphides are no longer formed there, the blackening will cease. This was Bouchard's suggestion which we have utilized, all the more since the small quantity of bismuth salicylate present helps to make these tablets still less irritating to the stomach, although even without this ingredient the perfection of our sulphocarbolates is so great that the irritation is exceedingly small. But before blackening ceases it will be found that, with much smaller doses than are necessary for this purpose, the abnormal odor has disappeared and we have simply the odor of a healthy stool.

This is quite sufficient: there seems to be no reason for pushing the administration beyond this point, unless it may be thought proper after bacteriologic examination of the stools has been made and it is found that the microorganisms which we wish to get rid of persist. For instance, in a case of amebic infection of the bowels we may find that the amebæ are diminished but not entirely banished by the sulphocarbolates. In this case we may, with propriety, push these agents until the amebæ completely disappear.

The same holds good in regard to the typhoid bacilli, although there may be a re-



AN OTTAWA, KANSAS, BUNGALOW

The home, not of one doctor, but of two, Drs. George W. and Josephine Davis—and of "Orpha Elizabeth"

infection of the bowels when these bacilli with increased virulence descend from the gall-bladder into the duodenum.

We would urge upon our readers particularly the importance of frequent bacteriologic examinations of the stools. The profession has pretty fairly learned the lesson of examining the urine, but as yet examinations of the feces are the rare exception. Our own rather extensive experience in this matter, however, has shown us that in a large number of instances we have obtained from this examination information in regard to the nature of disease and its progress which could not have been supplied in any other manner, excepting by that inference from the symptoms of the patient, which may or may not be correct. While we acknowledge that the skillful physician may be as a rule correctly guided by such inferences, it is never right to depend on such information when more exact data can be secured at the expense of, rather troublesome, it is true, methods of examination.

Nevertheless it is just such troubles that our patients pay us for (or should), and expect us to take, and although the examination of stools is by no means a pleasant occupa-

tion, if our patients' welfare demands it, they should be made.

While we thus insist upon the importance of the laboratory work in the conduct of serious cases, we would interject here a warning against the habit of too exclusive dependence upon it. For instance, suppose we have a case of suspected typhoid fever; it may require a week or more before the laboratory will verify our diagnosis by means of a Widal test. It would be absurd, however, for us to wait until this is done. If we do so, the proper time for medicating the patient effectively has been lost, and we have before us no longer the hope of aborting the disease, but simply that of conducting it, if possible, to a favorable finish; and even this hope has been greatly lessened by the long time during which the disease has been allowed to run wild.

As the disinfection of the alimentary canal by means of the sulphocarbolates is practically a harmless thing, we believe that it is good practice to empty the bowels and disinfect them in this manner as soon as we suspect anything like such an infection as that of the typhoid bacilli. Most physicians who adopt this suggestion report to us that

they have numerous cases which they are really unable to diagnose. They look to them in the first place like typhoid fever, and the older physician was accustomed to say that the patient was developing this malady. But after the bowels have been cleared and disinfected the symptoms subside so rapidly that we are constrained to believe that either the diagnosis was a mistake, and it was simply a case of fecal toxemia, or else that a true typhoid was aborted. In some instances an examination of the blood may detect the typhoid bacilli, but few active practitioners have the time to do such work in their busy practice, and comparatively few patients are willing to pay to have such work done, when they have within a few days recovered from the threatening illness and are ready to return to their duties. Push the sulphocarbolates. In case of doubt even, not harm but invariably good comes from the clean-out, clean-up and keep-clean process thoroughly applied and pushed to effect—a well-digested, consistent, *normal-smelling stool*.

W. C. ABBOTT.

Chicago, Ill.

GETTING THE MOST OUT OF LIFE

Anyone who looks at the pictures in this and preceding numbers of *CLINICAL MEDICINE* must be impressed with the *pleasantness* of the doctor's life. With all of the anxiety, hard work (and there is no profession that has more of it) and uncertainties of our profession, it certainly has its compensations. And first of these, in the editor's opinion, is the home. The doctor generally loves and appreciates his home and desires to make it attractive; and if he has the kind of a helpmate he should have his home is a pleasant abiding place. In proof we need only to refer you to our "picture gallery."

One of the very nicest of doctor's homes you will find illustrated in this number. The only reason that we can see why this home should be more attractive than that of lots of others is because it is occupied by *two* doctors instead of one—Drs. George

W. Davis and Dr. Josephine Davis of Ottawa, Kansas, a doctor and a doctor-wife. Their beautiful bungalow is a delight to the eye and a satisfaction to the soul. If you don't believe it look at the pictures.

That's the way we felt about it when we received a picture (see opposite page) from Dr. Davis (G. W.) back in December. So we wrote him, on December 17, and in reply we got a line, noted on our letter of the same date, saying: "This day arrived Orpha Elizabeth to live with us in our bungalow." Now we know that he has a *real* home—something only possible when there are children in it, to love and be loved, to plan for and to work for.

The exterior of the Drs. Davis's bungalow is satisfying. The interior views show



A nook in the living room of Dr. Davis's bungalow

that it is delightful throughout. On the first, or main, floor are the living rooms; on the basement floor are the kitchen, laundry, and—not least important—the "equine department," as the doctor calls it. His horses are certainly housed like the aristocrats they undoubtedly are. (We ought to have their pictures!) The stables,

as will be noted, are of concrete; on the side of the stall shown in the picture there is a biblical motto, "And there went out another horse."



Concrete Stalls in Equine Department of the Bungalow

Some idea of the living rooms may be formed by the "corners" shown of the living and dining rooms; the latter is furnished with thirty-six plate glass mirrors. Over the fireplace in the living room, on a slab of Carthage graystone, is cut the following legend:

"O turn thy rudder hitherward awhile,
Here may ye storme-bett vessel safelie ryde.
This is the Porte of res from Troublous toyle—
Ye worlde's sweate Inn from painse and wearisome Turnoyle."

Doesn't that describe the doctor's home, as it should be?

There are other beautiful homes illustrated in this number. Take for instance that place of Dr. Tafel at Phoenix, Arizona. We have only one fault to find with it—and that is, that we know so little about it to tell you. The doctor is culpable because he did not write us "all the story." He says, "My home is the only place to live in during the winter." We can well believe him, for many a doctor can say that. *Our* home isn't a bad place, summer or winter. So next time tell us more.

Doctor, get all you can out of life. If you haven't a home of your own, commence planning to have one *now*. Gather the

family around the library table and commence to make your plans for the handiest, most homelike, most beautiful, the most really lovable place that you and wife can

"fix up." Get a corner for your office, either in the house itself or somewhere in the yard—and make that office of yours help to "pay the freight." Buy good furniture, all the necessities and some of the luxuries, have a good horse, a good buggy, one that will be handy for the family, an automobile if you can afford it, pictures, music and magazines, books for the whole family. Surround yourself and fill your home with things which are stimulating to the intellectual

life; which will make you a better, a keener,



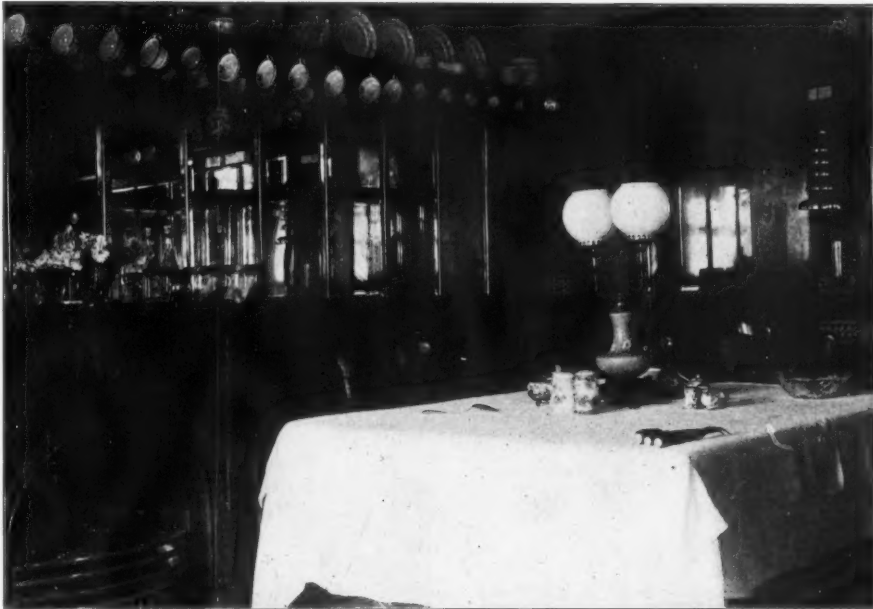
Fireplace in the Living Room

a more successful man, and which will give the children a taste for things which lead up rather than down, and make their home a place to come back to with grateful hearts.

Tell us of your home. Send in the pictures. CLINICAL MEDICINE aspires to help

ficult to get warm; constipation, furred tongue and loss of appetite. The next day these symptoms continued, with tenderness in the right iliac region and a temperature of 103.2°F.

There was no Widal test made, but on the seventh day of the disease the rose-rash of



A CORNER OF THE DR. DAVIS'S (OR MRS. DAVIS'S) DINING ROOM
This beautiful room has thirty-six plate glass mirrors around its walls

the doctor to be a happier as well as a more successful man. Let's all help to that end.

DIET IN TYPHOID FEVER

Ulceration in typhoid fever begins at the end of the first week. If proper treatment is begun prior to this occurrence the disease can be aborted. Not so when these lesions have formed. This shows the necessity of making an early diagnosis.

I have recently had an attack of typhoid fever and was my own physician, my wife acting as nurse. On Oct. 2, 1907, the symptoms began as follows: Dull headache, involving the whole head, severe aching of legs and hips; persistent rigors, it being very dif-

typhoid appeared, eighteen spots being counted on the trunk of the body. Moreover, I have just treated nine cases of fever in this vicinity and in most of them the rash was in evidence. Thus I felt sure of my diagnosis.

As to treatment: I began on the second day of the attack to clear the bowels; used calomel, podophyllin and saline laxative, also enemas of soapy water daily and every second day half a pint of saturated solution of salt in cold water. These measures were kept up for about five days till the bowels were clean.

As an intestinal antiseptic and while the fever lasted I took 5 grains of zinc sulphocarbolate in solution every two hours. As

to diet: Nature does not call for forced feeding in this disease. The appetite is nil. This I know now from experience. I fasted by preference the first forty-eight hours, taking only boiled water. Then as a diet I selected a food that leaves almost no residue—predigested beef (Mulford's). This was taken every three to six hours, as occasion might demand, and used exclusively until the tongue cleared. Other liquid foods were then taken, but no solids until the temperature had been normal for ten days.

It is commonly taught that you should feed liberally, in typhoid fever, with milk, gruels and other liquid foods; but it is only adding effete material to the bowels, which favors the multiplication of the typhoid bacillus.

Under the above treatment the temperature, headache and all other symptoms gradu-

tremors, dry brown tongue or muttering delirium, as described in works on practice.

But after all, what is stated above is simply in keeping with "clean out, clean up and keep clean," as taught in "The Alkaloidal Digest."

C. C. VAN WATERS.

Rensselaer Falls, N. Y.

[Right you are, Brother!—ED.]

KEEP A STOCK OF DRUGS; DISPENSE THEM YOURSELF

Several years ago, when starting in practice, an old doctor told me: "Dispense your own drugs, carry a good stock of them for your patients, and remember, the druggist is the worst enemy the doctor has."

At that time, the old physician's advice sounded like the cranky talk of an old sore-headed man; at this time, in the present year of grace, it comes up to me "fresh as green boughs of yesterday"—the truth.

Get you a good, well-selected stock of drugs, the kind you want, mix in a goodly supply of the alkaloids, supply each and every patient, write no prescriptions, and it will make for your success, financially and professionally. Mr Druggist, his family and friends will not have their noses in your business, neither will your



Christmas Day in Phoenix—Residence of Dr. Tafel

ally abated, until on the sixth day the temperature was normal, both morning and evening, and remained either normal or subnormal thereafter.

By cleansing out the alimentary canal and giving a limited diet, which leaves almost no residue, it is easy to keep it clean. Then the zinc sulphocarbolate or W-A intestinal antiseptic will be all the medication required.

With the treatment as above outlined there is scarcely any tympanites, no muscular

prescriptions be sent in and refilled after you are dead! Yes, after you are dead. Many such instances are known.

A man came to me the other day to get a foot-dusting powder, a good one. Said he: "I'll bet I've cured twenty fellers with this prescription. I got it from Doctor Blank, eight years ago." I didn't furnish him with the ingredients, as I was out of them at the time, but I thank (?) Dr. Blank for "knocking" me two dollars' worth.

How about the other nineteen or twenty refills?

Doctor, every time you write a prescription you are taking money out of your pocket and very often sending your patient to some substituter.

My friend, the late scholarly Dr. C. E. Boynton, told us something for us to remember, among his "Don'ts." It is this: "Don't tell your patients what you are giving them."

I beg of you, my brethren, take the second squint at this little article and "forget it not, forget it not."

ARIZONA DOCTOR

HIS DEVOTION TO ALKALOIDAL THERAPY GROWS WITH THE YEAR

My devotion to the principles of alkaloidal medication grows every year and while I have lost the enthusiasm of youth, I still have the confidence born of sure results. We "of the true faith" owe more to Dr. Abbott than to any other man in America for his energy, his enthusiasm and his courage in insisting on certain *real* facts which were ignored by the medical profession, but which have become corner stones of medical history even in their brief period. Long life to THE AMERICAN JOURNAL OF CLINICAL MEDICINE, and may its future be as prosperous as its past has been helpful!

W. L. JOHNSON.

Uxbridge, Mass.

[How we rejoice in friends like Dr. Johnson, who have ever urged us on to greater endeavor, and fortified our purposes by their many, many kind words of appreciation!—ED.]

SHALL WE "LET NATURE HAVE HER COURSE?"

While I am not one of the "big guns" I have had a fair share of work in the practice of my profession. I am not an enthusiast, nor am I a fanatic, but I think I know a good thing when I see it and have given it a fair trial. This I have done with many

of the alkaloids. I take them up and study them separately—familiarizing myself with one at a time. I try to "prove all things and hold fast that which is good."

Your "clean-out, clean-up, and keep-clean" theory has been my motto since I have been in the practice of medicine, and I have never had cause to regret adopting it. When visiting a patient I first "clean him up," externally and internally—and keep it up "eternally," and by this method I seldom fail to give great relief and secure better results than could possibly be obtained without unloading the bowel of its contents, which can but poison the system. I find the "dose enough" and "to effect" to be the best way, in my hands, to accomplish results.

I am aware that I am "cussed" by a great many of the older men in the profession, but in the seven years of active practice I have learned to think just a little for myself. Of course I read some ten of the best journals that are published, which, you know, include *The Journal of the American Medical Association* and *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*.

I am fully aware of the fact that I treat but few cases of pneumonia, not averaging more than six or eight per year in a practice of \$2500 to \$3000 yearly and in more than 200 families. And this is the way it goes: Mr. K. is taken suddenly ill with all the symptoms of pneumonia. I go at once and give him the proper treatment at the proper time, and in two or three days he is out and about his business. Mr. K. had no pneumonia! See the point? Old doctor's word for it, to be sure, without waiting for them to skin me.

Mr. B. is taken suddenly ill just as Mr. K., with all the symptoms of pneumonia, but instead of sending for a doctor he takes a few fever powders and waits a day or two; then I or someone else goes and, lo and behold! he has pneumonia. Why? Because he runs the regular course and "gives up the ghost." Yes, he had pneumonia! They will all say so. And I have been told so often and in such positive terms that pneu-

monia is a self-limited disease, that notwithstanding I have to deal with all the symptoms, to start in with, I can never know "for sure" that it is pneumonia until the patient is wrapped in his shroud and laid to rest, as are most of those who "have pneumonia."

It is time for us to wake up and do something for our patients. Each is a law unto himself, and each doctor should study each of his patients and treat him just as the case demands—not as Dr. "Big Gun" treated his patients fifteen years ago when he was preparing his book, which we are to gulp down as "authority" just because "HE" says so. If this is the way we are to treat our patients, let's get down and out and let some real doctor come in and fill the place we have been keeping vacant—so far as a *doctor* is concerned.

I know what this is going to do for me; but I have my own work and the experience of many other doctors to establish the cause for which this article is written—the greater study of our cases as they come, more active and more early interference in behalf of our patients, and the advancement of that most woefully neglected branch of medicine, therapeutics, without which medicine is a failure, many "authorities" to the contrary notwithstanding.

If this paper does nothing else, it will call forth criticism from many of the "let-nature-have-her-course" doctors, which will cause both them and myself to read more and study more, and thereby increase our knowledge of medicine, all of which will be for the bettering of mankind. And if this I do, I shall be more than satisfied. My only aim in medicine is to try to get on a plane where I can do the most for my patients in the least time possible.

S. S. WIDENER.

Stratford, I. T.

[There is no more encouraging "sign of the times" than that the number of physicians who *individualize* their cases is increasing. The necessity for knowing disease, knowing the processes and vagaries of the human body in sickness and health and

how to recognize them and differentiate one from the other is growing constantly greater; don't think for a moment that we minimize the importance of knowing all there is to know about this department of medicine. But why should the physician spend much time on the refinements of diagnosis—and then turn to Osler's "Practice" for the "treatment," which too often he accepts unthinkingly and unquestioningly? That's what we deplore—what we want to get away from. Let us seek to adapt our remedies, *in every case*, to the ends to be accomplished in that case. That's the only truly "scientific" way of practising medicine.—ED.]

THE DOCTOR'S HORSE

We wonder why none of our versifiers has tried his hand on this subject. Certainly it is worthy of the best the medical poet can do. Who will volunteer something on this theme?

But in lieu of the poem we have a picture to submit which tells its own story. "Faithful Charlie" belongs to Dr. T. A. E. Evans of Farmers, Kentucky, and so do the lusty "little alkaloidists" who are "taken" on Charlie's back—riding him to the barnyard. Dr. Evans has no use for the automobile. When Charlie is not in service for the doctor, the doctor's wife and the little ones always find him ready. Then, as the doctor says: "With the faithful horse and the 'cracker-jack' case the practice of medicine is made easy and with the bright faces of the little ones and the generalship of the faithful mother the home is made happy and the world is good to be in." And so it is!

THE POST-GRADUATE IDEA IS POPULAR

With a recognition of the beginning of your noble enterprise, and the conception and labor associated with the present edifice you have erected for the manufacture of the active principles of medicine, and their therapeutic application to the treatment of disease, I cannot refrain from giving expression to my ardent appreciation. In this attempt I find myself in a condition simulating that of the

author of the "Metamorphoses," and with Ovid exclaim: "*Animus fert dicere formas mutatas corpore. Dii aspirate meis coeptis.*"

I deem it an honor to accord to a commendable ambition the credit attaching to

tention is directed in the December number of the journal.

As comparatively little study has been devoted to this most important branch of medicine, of which Dr. J. Fordyce Barker, in one



FAITHFUL CHARLIE AND THE "LITTLE ALKALOIDISTS"

the result of tireless energy and philanthropic industry.

Conscious of the integrity of your purpose to render THE AMERICAN JOURNAL OF CLINICAL MEDICINE the peer of any medical journal in this country, I feel it would be an act of ingratitude to take advantage of the generous offers you present especially to your old patrons to secure the magazine at the present low price.

Apparently it makes no difference what advance is made in the price of subscription, there will be a corresponding increase in the size and character of the contents. This assurance is based upon the history of the past and is undoubtedly the consensus of all the friends of the journal. An illustration of this optimistic expression is furnished in the syllabus of The Clinical Medicine Post-graduate school of therapeutics to which at-

of his clinical lectures, said "our bread and butter depended," it cannot fail in receiving the highest expression of appreciation and gratitude.

We most heartily agree with the editor, that "the course is a splendid one," and confidently hope that his desires will be more than gratified by the number of students who "will take it up" and receive the reward of earnest labor in the interest of humanity.

L. S. BLACKWELL.

Perth Amboy, N. J.

[Thank you, Doctor. It is letters like these coming from men like yourself all over the country that has furnished us the incentive to persevere in our course. We are receiving many words of encouragement upon the "Post-Graduate Course of Therapeutics,"

some of the best men in the country, men identified with the teaching of that branch have written asking to participate in it. I trust, Doctor, you will contribute your share. As the matter develops, whenever you see an opportunity to put in the results of your own readings, thought and experiences, the way is open to you. If the cultured members of the profession like yourself would really interest themselves in this matter we feel satisfied that it will be the means of immense benefit to the profession.—ED.]

AN INTERESTING APPLICATION OF H-M-C

I have had one effect from the use of H-M-C which I have failed to see reported by anyone, and that is: that its daily use will anesthetize the perineum for twenty-four to forty-eight hours after the drug is discontinued.

During the past summer I was prostrated with inflammatory rheumatism and had H-M-C injected evenings for five weeks. Eight hours sleep would follow, and in connection with the eliminative treatment I would wake up mornings with the bedding and myself wringing wet with water from head to feet. I had no desire for it after quitting its use, nor any other unpleasant sequence.

G. E. STARNER.

Dunkirk, O.

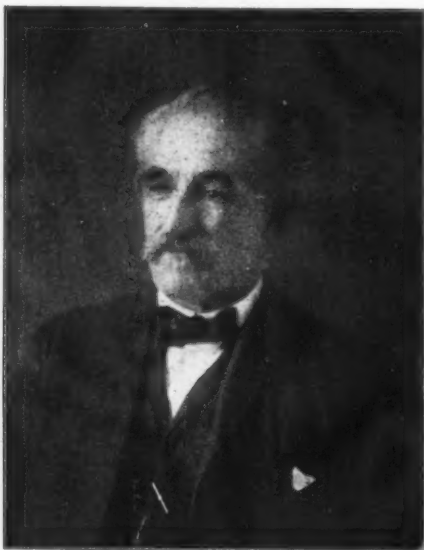
EXPERIENCE WITH GOITER

Not having seen any reports on goiter I thought the following case might interest your readers:

On Sept. 29 I was called to Washington, D. C., to see Mrs. M., age 60 years, with a goiter of thirty years' standing. She was small in size, about ninety pounds in weight, with a neck measuring nineteen inches. The tumor extended from the sternum to the chin. The treatment for the first three weeks was daily, calcidin, grs. 2; proto-nuclein, three tablets, with compound ointment of iodine applied twice daily and well rubbed in. The following three weeks pro-

tonuclein was omitted, the patient receiving daily calcidin, gr. 1 and biniodide of mercury, gr. 1-12, with the ointment continued as before.

By this time there was marked improvement in every way. Appetite and digestion better; the bowels, previously so constipated as to require epsom salt every few days,



DR. GEORGE ROBERTS

now regular. The pressure on the trachea so relieved that she slept without choking. The neck now measured seventeen inches, the largest reduction being in the upper part of the tumor, so the chin could now be brought down to neck. The tumor is much softer and I now look for more rapid reduction in size.

Not a day passes but that calx iodata comes into use, displacing the old-time cough syrups, as well as potassium iodide for rheumatism and other blood disorders. I have as yet failed to see a case of idiosyncrasy against its use. In this latter respect I find more trouble with hyoscyamine. Many cases will respond beautifully, then a patient will complain of all kinds of sensations and refuse to take it; one or two granules dilating the pupils and drying the

mouth. A lady yesterday said she felt foolish after taking three granules in nine hours. In this case the mouth was dry and pupils fully dilated.

GEO. ROBERTS.

Lincoln, Va.

[Give "small doses, frequently repeated, to effect," Doctor, and the terrors of "idiosyncrasy" disappear.—Ed.]

DUBOISINE WINS A GOOD CASE

October 1 a young woman, the mother of two children, came to talk with me, as she said, "to please a friend." She did not want an examination. She had suffered from headache almost constantly for three years, having been under some doctor's care all that time. She had been operated upon for laceration of the cervix, but it brought no relief. Every remedy used had failed to help her headache, and she had about decided to stop consulting any more doctors; but this friend had been insistent.

As she would not be examined and did not agree to come again, I decided, after talking to her for a time, that there were two things I might do that would do her some good. First, her breath was bad, and I might correct this; second, I felt I might relieve the congestion of her head.

I gave her the "clean-up and clean-out" treatment, and ordered that a granule of duboisine be taken every ten minutes for six doses and then every hour till the symptoms of headache had passed. After a trial of this method, I told her to come back and see me if [she wished to engage my services farther. In three days she returned, saying that she thought I could cure her (and that's half the battle). I

then examined her carefully, and under the treatment instituted she has not since had another headache and bids fair to recover perfect health.

F. G. DE STONE.

San Francisco, Cal.

ONE OF THE FAMILY FROM ILLINOIS

The only thing lacking in the accompanying picture, is the face of the owner, Dr. J. B. Scruggs, of O'Fallon, Illinois. We would like to "take a look" at him, his wife and all the little Scruggses—for we feel that there must be some, to fill that fine, big house and make it really worth living in.



RESIDENCE OF DR. J. B. SCRUGGS

The doctor writes that he is using the alkaloids quite extensively, and that he likes them. Of course! That's the story all our friends tell—and the woods are "full of 'em!"

We like these pictures. Somehow they make us feel neighborly—as if we really were near enough to shake hands and pass along the spoken (as we would, "by these presents," the unspoken) word of warm friendly personal regard which we feel for all the family, individually and collectively. Keep the pictures coming! Have some made especially for CLINICAL MEDICINE. Let's see who can make the best exhibit. By the way, while sending along the pic-

tures let us have a few plans of houses and offices. And with every picture or plan give us a short descriptive article. Nor should we forget that this is a *therapeutic* journal.



Loading bananas in Honduras, to be transferred to steamship for New Orleans

THE HYPODERMIC ANESTHETIC

Last April I wrote you of my experience in the use of morphine and hyoscine in hospital practice as an adjuvant to chloroform. This report was based upon fifty cases in which I gave morphine about one hour before the operation. I then reported the following advantages:

First, the absence of nervousness at the beginning of anesthetization; second, the small amount of chloroform required to produce anesthesia; third, the absence of shock at the initial incision, as evidenced by sudden dilation of the eyelids (this is practically always observable even in profound anesthesia); fourth, the exceedingly small amount of chloroform required to maintain anesthesia; fifth, the almost invariable absence of postoperative nausea. This last has often seemed to me to be the greatest good of all.

Following this experience I made use of the compound H-M-C, finding that it had

the advantages of being all in a single tablet and hence convenient, while the cactin was not to be despised. I have never seen any untoward effect from the use of hyoscine before operation, possibly because I had always

been careful to obtain the pure article. During the following six months I employed the H-M-C tablet in fifty cases, surgical and obstetric. This experience confirms the advantages I had previously found the combination to possess in surgical work. It is quite the only means of producing anesthesia which is characterized by absence of all excitement,

from shock from the first incision with complete freedom from vomiting, and, greatest boon of all, postoperative comfort.

I have been twice operated upon myself; once with chloroform, the second time with the hyoscine, morphine and cactin, followed by a few drops of chloroform; and oh! what a difference! The first time I was horribly sick for two days, vomiting, retching, ready to die from nausea; on the second occasion I was comfortable, sleepy, with no nausea, but hungry.

In obstetric work this tablet is of incalculable value to me. In my practice the doctor has to do everything, attend to the anesthetic, the child and the mother. I used to have confinements where I had to drop the chloroform on a towel over a woman's face, hurriedly rinse my hands and attend to a distending perineum, then back to the chloroform, etc., *ad infinitum*. Now such cases are a delight. The woman dozes comfortably, moves when told to do so, does not complain of pain, the parts seem to relax

better, and best of all, I have two nice, clean hands, and nothing for them to do but attend to the labor *per se*.

A few nights ago I had a case where unfortunately the perineum was torn by a eleven-pound baby. As the woman was dozing after the placenta was expelled, I began tentatively to sew up the perineum without any chloroform, and found that I could complete the operation, while the woman was under the influence of the solitary tablet I had given her two hours before.

Up to the present I have been using the ordinary full-strength tablets. When the woman begins to complain at all bitterly, whether it be in the first or second stage, I inject one full tablet. As a rule, however, I have not found it necessary to use it until the head is getting near the perineum. I have not always used the full dose, but once or twice when I gave a whole tablet early in the conflict I gave one half-tablet later. I have sometimes fancied, when I gave a full tablet toward the end of the second stage, that the pains were delayed and weakened very slightly, though not to any greater extent than when I used to give chloroform. Lately, therefore, I have been giving half the tablet rather early, and if necessary, giving the remainder later. On the whole I think this is preferable to giving a whole tablet either early or late. The half-strength works with a nicety when used in this manner.

As you will see, my experience covers at least one hundred cases, over a period of eighteen months; hence I feel that I have a

right to an opinion of my own, based on my own experience and not on the reports of strangers. Having employed the combination without cactin and afterward with it, in a sufficient number of cases, I may say frankly that the latter is a decided addition, facilitating in some way the anesthesia and aiding in tranquillizing the patient.

CHARLES GAVILLER.

Grand Valley, Ont.

[Another valuable point brought out by Dr. Gaviller is that it is easier for the doctor to keep his hands aseptic in labor-cases, when using H-M-C, than when he depends upon chloroform. He says that "those who have tried to do everything in a confinement case and keep the hands conscientiously



House occupied by Dr. John Abbott, at Utila, Honduras

aseptic will appreciate the difference between the two methods." Right you are!—Ed.]

FROM AN ALKALOIDIST IN HONDURAS

Enclosed herewith you will find my photograph and a half dozen views of the place where I have been spending a month's vacation. Utila is a small island, lying about eighteen or nineteen miles off the north coast of Honduras and about forty-

five miles to the westward of my home here. Although it is a Spanish possession, most of the inhabitants are of English or American parentage and have the "go-aheadativeness" of their forefathers about them, as you will note from enclosed views.

My success with the alkaloids and active principles has been all that one could de-

[I know that the editor only voices the desires of the entire "family" when he asks Dr. Abbott—my far-off namesake—to tell us that "more" about Central America, its people and their diseases—and how alkaloidal practice is helping solve the doctor's problems there as everywhere else. Let's have another chapter, Doctor.—ED.]

THE THIRTY REMEDIES MOST USEFUL IN ALKALOIDAL PRACTICE

If all physicians were limited to thirty remedies in the practice of medicine, probably no two would make the same selection. The location, time of year, and whether the physician was in general or special practice, as well as other things, would to a certain extent govern the selection. I am writing this from a general practitioner's standpoint, and will give a selection of thirty remedies which at the present time in my opinion are the most important remedies in alkaloidal practice. That is, if I should adopt the alkaloidal practice exclusively and were



DR. JOHN ABBOTT

With his Number Eight Case, starting out for business

sire and therefore I have no wish to return to the use of the galenicals.

I have found Abbott to be straight in his dealing and his goods just what they are represented to be. CLINICAL MEDICINE is a jewel! Therefore I wish you all manner of good, for the practical help you are putting in the hands of medical men. May we all learn to use the alkaloids better!

I trust that the views may be of service to you and if you desire further information about this country let me know and I will give you what I can.

JOHN ABBOTT.

Oak Ridge, Ruatan, Spanish Honduras.



UTILLA YOUNG LADIES

The two in the upper right- and the lower left-hand corners are the doctor's nieces.

limited to thirty remedies or compounds I should select this list. Of course this list is for internal and hypodermic use exclusively. A physician can take these thirty remedies and do a good general practice so far as internal remedies are concerned. Of course there are many others that would be needed, but one could do very well with these only.

This list should be of some value to physicians just beginning practice and to old physicians who wish to adopt the active principles; that is, it will assist them in making a selection of the most important remedies to begin with.

After making my selection I find that half of my remedies are compounds, which no doubt many will not like, but the value of compounds is very well known to most readers of *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*, and do not need discussing here. I will give a few of the therapeutic uses of each of the thirty remedies.

1. Anemia and chlorosis formula. Each granule contains iron arsenate, gr. 1-67; quassin, gr. 1-33; quinine hydroferrocyanide, gr. 1-6. Dose, in acute cases, four to eight granules daily, later two to four. This compound acts as an antiperiodic and will give very good results in intermittent fever, anemia, chlorosis, convalescence, etc. It is a good general tonic.

2. Anodyne for Infants (Waugh): Formula of each granule: nickel bromide, gr. 1-134; codeine sulphate, gr. 1-67; powdered ipecac, gr. 1-134; lithium carbonate, gr. 1-25; oil of anise, m. 1-134; saccharin, q. s. Dose, one or two granules every fifteen to thirty minutes until effect, then less frequently. This is a valuable compound for restless babies, colic, etc.

3. Antiasthmatic (Abbott): Formula of each granule: strychnine arsenate, gr. 1-134; amorphous hyoscyamine, gr. 1-500; lobelin, gr. 1-134; apomorphine hydrochloride, gr. 1-67. Dose, one granule every fifteen minutes until effect and then less frequently. This compound checks respiratory spasm and alleviates attacks of suffocation. It is good remedy for "smothering spells" or shortness of breath.

4. Antimalarial (Dumas): Formula of each pill: strychnine arsenate, gr. 1-250; quinine arsenate, gr. 1-134; iron arsenate, gr. 1-12; quinine hydroferrocyanide, gr. 1-6; capsicin, gr. 1-67. Dose, one pill every two hours until stimulation and then less frequently. This is a valuable antiperiodic and general tonic and can be used with benefit in nearly all debilitated conditions.

5. Antiscorbutic: Formula of each tablet: iodized calcium, gr. 1-3; phytolaccin, gr. 1-3; stillingin, gr. 1-6; arsenic iodide, gr. 1-67; nuclein solution, gtt. 4. Dose, one tablet three or four times a day. This is an extremely important compound for many conditions. It is one of my favorites, as it is often indicated in general practice. If physicians will learn to use this compound it will be a favorite with many of them. It is a systemic antiseptic, alterative and re-constructant of the very best class.

I have found this compound of value in all diseases due to faulty metabolism and retrograde tissue change. In weakly undeveloped children of scrofulous conditions it is of much value. If the teeth are prone to rot add calcium lactophosphate. In glandular involvement it is excellent and of value in chronic malaria with enlargement



DR. J. A. BURNETT.

of the spleen, mumps and the strumous diathesis. It will cure most forms of chronic throat trouble.

6. Aphrodisiac tonic: Formula of each pill: strychnine hypophosphite, gr. 1-100; phosphorus, gr. 1-200; cornin, gr. 1-6; cactin, gr. 1-67; nuclein solution, gtt. 5. Dose,

one or two pills every three, four or six hours. This is a powerful reconstructive aphrodisiac, a stimulant to erectile tissues; but this is not the main use of it. Its most important use is as a general tonic in asthenic conditions and as a heart tonic and sustainer. It revivifies the blood.

7. Apomorphine hydrochloride is an expectorant and emetic. Dose, gr. 1-67, as an expectorant and gr. 1-10 hypodermically as an emetic.

8. Atropine sulphate is of value in night-sweats, uterine hemorrhage and various other conditions which are very well known. Dose, one granule, gr. 1-250, every half to one hour as needed.

9. Iodized calcium is the main remedy in all forms of croup and croupous conditions. It is also used in grippe, bronchitis and various other conditions. It takes the place of potassium iodide. Dose, 10 to 60 grains daily. When given for croup give one grain in hot water every ten to fifteen minutes.

10. Calcium sulphide is a systemic antiseptic and of much value in smallpox, measles, diphtheria, whooping-cough, gonorrhea, furunculosis, carbuncles, skin diseases of various kinds, and in many other diseased conditions. Dose, one to six granules, gr. 1-6 each, every one-half to two hours until saturated, then often enough to keep saturated.

11. Calomel, podophyllin and bilein compound, No. 1. Formula of each tablet: calomel and podophyllin, each gr. 1-6; bilein, gr. 1-8; and strychnine arsenate, gr. 1-250. Dose, one tablet every half hour until four, six or eight are taken, and in two hours after the last dose take effervescent saline laxative. This compound certainly arouses the liver, a thing that is very important in many diseased conditions, especially in acute diseases.

12. Chionanthin is an hepatic stimulant of great value and in very large doses somewhat laxative. It is one of the best remedies for chronic diseases of the liver that we have and a very important remedy in many other diseased conditions. Dose, three to six granules after each meal and at bedtime.

13. Colchicine is one of the best remedies for rheumatism. It should be pushed to free purgative effect in order to be effective. Dose, one granule, gr. 1-134, every two hours until effect, and then less frequently.

14. Cypripedin is a relaxing nervine and one that has a wide range of usefulness, especially in nervous complaints. In nervous, "high-strung" women cypripedin gives good results and in nervous conditions arising during fevers in persons of a mental temperament. It is one of the best remedies in subsultus tendinum. Cypripedin and scutellarin are somewhat similar in action. In nervous conditions calling for cypripedin the pupils are usually contracted and for scutellarin they are usually dilated. Cypripedin is more relaxing than scutellarin, but scutellarin has more influence upon the heart. Dose one to six granules, gr. 1-6, every half to two hours as needed.

15. Dolorpyrine: Formula of each tablet: caffeine citrate, gr. 1-2; sodium bicarbonate, gr. 1; acetanilid, gr. 3 1-2. Dose, one or two tablets every one or two hours as needed for fever or pain.

16. Echinacea is a general antiseptic and can be used in all conditions where there is a tendency to sepsis. It is the best remedy for snake bites and the bites and stings of all reptiles.

17. Gelsemine is a relaxing antispasmodic, nervine and febrifuge. In some cases small doses are sufficient, but in most cases it should be pushed until there is double vision, in order to get good results. Dose, one to three granules, gr. 1-250, every two hours until effect and then less frequent.

18. Glonoin dilates capillaries and arouses the heart's action and is a quick stimulant. Dose, one or two granules, gr. 1-250, every fifteen to thirty minutes until effect. This remedy acts more quickly when the granules are dissolved on the tongue and then swallowed than when given hypodermically.

19. Hyoscyamine, amorphous, is antispasmodic and mildly hypnotic. It is of value in nearly all pains in the abdomen, such as colic, afterpains, etc. Dose, one

granule, gr. 1-250, every fifteen to thirty minutes until effect, then less frequently.

20. Hyoscine, morphine and cactin comp. No. 1: Formula of each tablet: hyoscine hydrobromide, gr. 1-100; morphine hydrobromide, gr. 1-4; cactin, gr. 1-67. Dose, one tablet hypodermically as needed. This is a general anesthetic, and a valuable hypnotic and analgesic. I use it in most cases where hypodermics of morphine and atropine are generally used. It is very valuable in puerperal convulsions and other forms of convulsions, in cases of obstetrics and various other conditions too numerous to mention.

21. Intestinal antiseptic compound sulphocarbolates: Formula of each tablet: zinc sulphocarbolate, gr. 1-2; calcium sulphocarbolate, gr. 1; sodium sulphocarbolate, grs. 3 1-2; bismuth salicylate, gr. 1-4; menthol, gr. 1-15. Dose, one or two tablets every two hours. This is a valuable compound in typhoid fever, diarrheas, and a great variety of diseased conditions, both local and general.

22. Lithium benzoate is of value in cystitis, pyelitis and other urinary maladies. The most important use that I have found for it is for "burning urine," that is, when there is a burning sensation when urinating, not of gonorrheal origin. I often find such cases, and usually in women, and the urine is hyperacid. If it should happen to be alkaline then ammonium benzoate is the remedy, but it is nearly always hyperacid. Dose, one or two grains every two to four hours.

23. Myricin is a general tonic and stimulant and a remedy of much value in various diseased conditions. Dose, two to three granules, gr. 1-6, every two or three hours. Full information on this remedy can be found in my article, "Myricin," December, 1906, *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*.

24. Neutral cordial: Formula of each tablet: sodium carbonate, gr. 1; sodium sulphocarbolate, gr. 1; emetine, gr. 1-134; hydrastin, gr. 1-6; rhein, gr. 1-6; aromatics, q. s. Dose, one to four tablets every two to four hours. This is a very valuable com-

pound in acid conditions and in most forms of diarrhea. It is of special value in the diarrhea of children when the tongue is broad and with a white pasty coat and the stools sour-smelling.

25. Pilocarpine nitrate is the most powerful diaphoretic and sialogog that we have. It is of value in sthenic cases of erysipelas and various other conditions. Dose, gr. 1-67 to gr. 1-10 as needed.

26. Saline laxative: Formula: purified magnesium sulphate (60 percent) in effervescent combination with pure tartaric acid and sodium bicarbonate, sweetened with cane-sugar. Dose, one to four teaspoonfuls in half to two-thirds of a glass of hot water. Cold water will answer but hot water is best. This is a very important laxative and its uses are very well known.

27. Strychnine arsenate is a general and heart tonic. Its uses are well known. Dose, one or two granules, gr. 1-67, every two, three or four hours, as needed.

28. Sudorific and resolvent. Formula of each granule: emetine, pilocarpine hydrochloride, codeine sulphate, each, gr. 1-67. Dose, one granule every half to two hours. This compound is of much value in quinsy, many forms of sore throat, and is the best cough granule for general use that I have ever used. It will prove to be of value in all cases of bronchial troubles where the secretions are not free enough. It loosens exudations, promotes resolution of pulmonary engorgement and pleuritic effusion. If I was limited to only one cough remedy this compound would be my selection.

29. Uterine sedative and nerve: Formula of each pill: helenin and viburnin, each, gr. 1-12; dioscorein, gr. 1-6; gelsemin, gr. 1-250; avenin, gr. 1-6; scutellarin, gr. 1-12. Dose, one to three pills every two or three hours until effect, then two or three times a day. This is a very valuable compound in many diseases of women and as a general tonic and nerve.

30. Worm remover: Formula of each granule: chelonin, gr. 1-6; santonin, gr. 1-10; podophyllin, gr. 1-33. Dose, for a child six to ten years old, three granules at night and one every two hours next day, until effect.

There are more children bothered with worms than is generally supposed, and occasionally adults have them. I have seen cases of chills refuse to yield to antiperiodics and cholagogs, until a vermifuge was given, when they were easily controlled. Others have noticed this same thing in practice.

JOHN ALBERT BURNETT.

Auburn, Ark.

AN EXPERIENCE WITH BEGINNING CARBUNCLE

I snatch a little time to give a recent experience. About ten days ago, I found a lady, middle age, mother of four children (granddaughter of mine by marriage). There was on her neck a carbuncle, a very ugly looking thing and very painful. Knowing from past experience that anthrax was a troublesome condition, I tried a new procedure in the case. I ordered a saline purgative, then saturated the system with calcium sulphide. I made a saturated solution of menthol compound and had it applied constantly when awake.

The next day the dark purple base of the tumor had disappeared, and it looked very much improved; all pain gone. In four days the thing was well.

Now the cause of the above venture. For many years I have cauterized small breaches of continuity with nitrate of silver. You all know this produces black spots, with frequently scabs and pus under them. Now I use a saturated solution of menthol compound instead. Sometimes I use it in powdered form. It does the work and is nontoxic. For sore mouths and throats, it is "the boss." It needs to be made stronger than directed by the makers.

M. W. C. FRAZIER.

Carrizo Springs, Tex.

ANTIPROHIBITION

On medical subjects none but a bold man or a profound medical scholar would take issue with you, but on moral questions it is different. We agree that physicians should heartily cooperate in an effort to stay the

tide of intemperance with which the land is inundated and close saloons, but we are sorry to say we do not agree as to the means by which these things can be accomplished. It seems to me the all important thing is to create a healthy moral sentiment in society. We believe that this can be done by teaching truth and executing justice and only in this way. Error demoralizes and degrades men. Truth elevates and ennobles them.

In the early part of the last century men were laboring under the delusion that alcoholic liquor was among the necessities of life. The result was, everybody drank and drunkenness was fearfully prevalent; even the clergy drank, some of them to intoxication. In the second quarter of the nineteenth century temperance men taught that in health men do not need intoxicants, that their habitual use endangered health and happiness, that drunkenness was a grievous sin against God. A public sentiment was thus created against drinking and drunkenness. The result was that the whisky jug was banished from the harvest field, the decanter and wine glass disappeared from the sideboard, and thousands forsook their cups and practised total abstinence. In 1823 the consumption of distilled liquor per capita in the United States was seven and a half gallons; in 1850 it was only two and a half gallons per capita. At that time beer was not much used.

The Maine Liquor law was enacted about the middle of the nineteenth century. Its father, Neal Dow, put forth the following declaration: "The liquor trade transforms thousands upon thousands of good, industrious citizens into drunkards, vagabonds and tramps."

It seems to me that the object of this was to justify the practice of inflicting pains and penalties on the liquor vender and permitting the drinking man and the drunkard to go unpunished. Be this as it may, prohibition is based upon the hypothesis that the saloon is the cause of drunkenness. For a generation the cry has been: "Down with the liquor traffic," as if it were a living, moving monster that seized men and made them drunken in spite of all their efforts to

thwart its purposes. The effort has been to create a public sentiment against the sale of liquor, and it has succeeded, but in so doing it has shifted the guilt of the drunkard to the liquor vender. In the first quarter of the last century the General Assembly of the Presbyterian Church spoke of drunkenness as a crime. In 1886 Schuyler Presbytery declared that drunkenness is not a crime. Those who opposed the idea that drunkenness is a crime did so on the ground that to admit that drunkenness is a crime is opposed to prohibition. They were right. If it be true that it is the duty of the state to keep intoxicants out of men's way she is responsible for the drunkenness within her borders, for were she to do her duty no one would become intoxicated. If it be true that it is the duty of the State to keep alcoholic liquor out of the way of her citizens the drunkard and his family are objects of commiseration; instead of inflicting pains and penalties on the drunkard she is morally bound to compensate him and his family for the injury they have sustained in consequence of her dereliction of duty.

The result of shifting the guilt of the drunkard to the liquor vender is an enormous increase in the consumption of intoxicants. The consumption of distilled liquor has decreased one-half gallon per capita, but the increase in the consumption of beer is immense, and saloons have multiplied out of all proportion to the increase of the population.

"A cause must exist prior to its effect," is an axiom. Noah and Lot were drunken before there was a saloon. Proof positive that the saloon is not the cause of drunkenness.

"Remove the cause and the effect will cease," is a truism. Were all men to stop drinking the saloon would disappear for want of patronage. It necessarily follows that the saloon is the effect of the drinking usages of society. If we would suppress the saloon we must remove the cause that brought it into existence and which still feeds and supports it.

When General Grant was besieging Vicksburg, had he permitted its friends to carry

reinforcements and supplies into it unmolesed he would have been regarded as disloyal or incompetent. For fifty years the great guns, the little guns and the popguns of the prohibition host have been pouring shot and shell into the saloon. The commander in chief of that army issued order number one. "We do not want to interfere with men's right to drink." Under this order the friends of the saloon have in the last year carried into it more than a billion dollars to feed the garrison and strengthen the works and not a gun has been pointed at them.

The highest authority says: "The love of money is the root of all evil." So long then as our fellow citizens are ready and willing to enrich men who sell liquor they will get the liquor. It seems to me high time men would learn that law is not a force that compels men to do this or not to do that. If law could have prevented that which it prohibits there would not now be any evil with which to contend, for the divine law prohibits every evil. It prohibits drunkenness and God enforces this law faithfully, and yet men drink to intoxication despite the law and its enforcement. Since a perfect law perfectly enforced does not prevent that which it prohibits it is irrational to suppose that an imperfect law imperfectly enforced will prevent that which it prohibits. Observe there is a wide difference between prohibiting a thing and preventing it. Prohibition does prohibit but it does not prevent the sale of liquor.

Law is an educator. "For by the law is the knowledge of sin." That is what the law prohibits is deemed wrong; what it does not prohibit it sanctions. It licenses by permission, and is deemed right. Therefore were the people of Illinois to place a law on her statute book prohibiting the manufacture and sale of alcoholic beverages and fail to prohibit drunkenness we would be teaching that the things prohibited are wrong and that which is not prohibited is right. I will not be a party to such teaching.

The divine law prohibits murder, the state enforces this law. God's law prohibits

theft, the state enforces this law. The divine law prohibits drunkenness, no good reason can be given why the state should not punish an infraction of this law. Were drunkenness treated as a crime, as it should be, it would necessarily follow that the man who furnished liquor to make another drunken would be a party to the crime of drunkenness and be subject to the same penalty as the drunkard whether the act was done in a saloon or in the finest mansion in the state. Treating drunkenness as a crime would have a salutary effect in deterring the young from forming the drink-habit.

If it be true, as commonly taught, that morality would be promoted by so environing men that they could not sin by drinking to intoxication, it logically follows that the highest state of morals would result from so environing men that they could not sin in any manner. But man is a triune being. He has a physical, a mental and a moral nature. To develop his physical organism man must use his muscles; to develop his mental powers he must exercise his mind, he must think and reason; so to develop his moral nature and increase his capacity for virtue and happiness he must choose between right and wrong. Deprive man of choice and you rob him of his manhood. Without an opportunity to choose man would have no use for a moral nature, his enjoyment would be on a level with that of the birds of the air or the beasts of the field. God has not raised an insuperable barrier between men and wrong-doing. When men propose to do so they assume to be wiser than their maker.

SAMUEL HENRY.

Camp Point, Ill.

[We print Dr. Henry's letter, not because we agree with his position, but in the interests of fair-play—that "the other side" may have its hearing. We believe that the saloon is the greatest force for evil in modern society, and that every possible effort should be made to destroy it because it does breed crime, degeneracy and immorality. Because we do not wish to "deprive man of choice" should we place temptation at his door and

thus rob him of his manhood? The unlimited privilege of "choice" could be used to excuse any degree of license.—Ed.]

A MAN WHO DOES THINGS

I have just finished reading one of my journals and all the clamoring over the idea of aborting pneumonia. Some doctors think it out of the bounds of reason to make such claims. I see one brother writes, "You can't claim a case of pneumonia until it has reached the stage of consolidation or lung-solidified." While I do not think we need to wait quite so long to diagnose a case of pneumonia, I will accept his position for the sake of argument and then, with the alkaloidal treatment (in the hands of a competent man) the case can be handled O. K. and the patient make a quick recovery. Now, I will give you two cases and let you be the judge and name them.

Case 1.—Negro girl, 8 years of age. Was called Feb. 2, 1906, at 6 p. m. Found patient suffering with severe headache, temperature 103.4°F., pulse 120, respiration 40. Gave acetanilid compound tablets in proper dose to reduce temperature, calomel and podophyllin, gr. 1-6 each, every hour for six doses. Did not see patient any more until Feb. 4 and found patient's temperature 104°F., pulse 128, respiration 46. Very tight cough, rusty sputum, very severe pain in right side. On examination found dull area with crepitation over upper lobe; patient wanted to lie on the right side; breathing very short and loud. I put her on the alkaloidal treatment for—well I wont say—but I pushed the treatment. Saw her next day; pulse 106, respiration 36, temperature 102°F. Left instructions to continue treatment as before. Next day temperature 100°F., respiration 30, pulse 90; still coughing and spitting blood. Continued the treatment but left off the push. Next day dismissed the case and patient made a speedy recovery.

Case 2. Lady, age 24, married, family history good. Was taken with chill March 7 at 6 p. m. Walked home about half a mile;

suffered all night with very severe pain in left side. I was called next morning about 10 a. m. Found patient with rose-flush, panting, and said she could not get a long breath. Very severe cough, sputum rusty; temperature 104.2°F., pulse 140, respiration 46. On examination, found lung solidified. I say "solidified;" I can't say that exactly, but disease was spreading very rapidly over lung. Headache, heavily coated tongue. Placed here on alkaloidal treatment, called again at 6 p. m., same day; patient much better. Called next day at 11 p. m. Found patient still better, pulse 98, respiration 36, temperature 100°F. Never made another visit. Patient is now taking a hand in piling brush and helping her husband on the farm.

Now you may call this what you will, but the alkaloids are the thing to knock it out. I have no fears about handling pneumonia since I began with the alkaloidal treatment, and by the way, I am getting short on alkaloids, so Monday or Tuesday you may look for another order.

M. P. H.

Texas.

[Your arguments are convincing and your position is unassailable. Independent men have long since come over to our way of thinking, but there will always be a certain number of doubting Thomases and "blind" men, who having eyes, see not, and having brains, understand not.—Ed.]

ENURESIS FROM LOCAL IRRITATION

A bright little girl of four years was brought to me for treatment for incontinence of urine. The little lady would get along very well during the forenoon but during the afternoon and night she could not control her bladder. The mother tried dieting and persuasion, but with no effect. I asked for a sample of her urine and suggested the possibility of some local irritation. The next day the parents brought the little girl in for examination, the father stating that the mother had seen something "like fish bones." Upon examination and removal the "fish bones" proved to be the beards of a spikelet

of some kind of grass. The spikelet had worked its way into the fold to the left of the meatus urinarius until it was entirely covered except the ends of the beards which were visible and had greatly irritated the surrounding mucosa.

This case illustrates forcibly the need of careful examination and accurate diagnosis, and the wisdom of trying to remove the cause of any trouble instead of contenting ourselves with simply treating symptoms. Any amount of medicine would have been of no avail so long as that spikelet remained imbedded in the mucosa, thus keeping up the local irritation.

J. R. SCHOFIELD.

Fort Collins, Colo.

[Right you are, Doctor! Get to the bottom of things. Examine into essential causes. Know the problem before you—then its solution will often be found easy, often ludicrously easy. The trouble with too many doctors is that they only half do their work. Be thorough! That's the only safe way.—Ed.]

MORE PNEUMONIA EXPERIENCE

Six days ago I was called to N. C., male, age 20, who was very ill. About 2 o'clock in the morning he took a chill and a pain near the left nipple, headache and rise of temperature. He got up and fainted and continued to faint every time he rose up.

I saw him in eight hours from chill. His temperature was 105° F., respiration 32, pulse too weak and uncertain to get any correct count, was expectorating a bloody mucus, delirious, and now and then vomiting a greenish-looking fluid. I examined him with care, by physical diagnosis, and the diagnosis was positive, lobar pneumonia in the lower lobe of the left lung. It was plain to me and visible to a multitude of witnesses present that he could not last but a day or two if not relieved.

Treatment: Calomel, grain 1-2 every half hour for six doses, to be followed by saline, then intestinal antiseptic. At the same

time I gave the following: aconitine granules, gr. 1-134, No. 20; digitalin granules, gr. 1-67, No. 20; strychnine granules, gr. 1-134, No. 20; water, twenty teaspoonfuls. Dose, one teaspoonful every half-hour till fever lowers, then not so often. The fever and delirium continued high till about the twelfth dose, then it began to lower a little; I left the remedies with the nurse with directions and returned in a few hours. I found the patient cold, pulseless. I asked the nurse about the mixture. She said all was given, last dose two hours ago. Was it aconitine poison? or was it the "crisis" of pneumonia? He had taken all the mixture of aconitine in sixteen hours. He looked as if he were dying; but let it be poison or crisis, the application of heat, nitrate of strychnine, atropine, used with hypodermic syringe, restored him and in an hour I could count his pulse for the first time. Here I gave nuclein, and a little food; in a few hours later I put him on triple arsenates with nuclein and calcidin. He had no more fever nor pain but expectorated a little bloody mucus for twenty-four hours, and now, the fourth day, is sitting up, taking food and has been dismissed, well.

One physician has said this was not pneumonia, for it got well too quickly. But I am fully competent to diagnose pneumonia. Another says pneumonia abruptly terminates in a few cases: this might account for it. No, for I have treated and aborted four other cases like this last season, with the same line of alkaloids, except digitalin—veratrine and strychnine having been added to or withheld from the aconitine to suit the pulse. This is the largest amount of aconitine I have ever given to one patient. In my hands it requires from twelve to twenty aconitine granules with some one or all of the other alkaloids, digitalin, veratrine, strychnine—completely to control the fever and the circulation and put an end to the pneumonia in adults.

To be successful this line of treatment must be begun during the first few hours of illness, which will abort the vast majority of pneumonias.

There is a treatment for pneumonia, an effective treatment, that has been successful in my hands in aborting, cutting short and curing five cases of croupous pneumonia. These cases were treated on the plan of Dr. Abbott with the alkaloids. I never have obtained any help from external remedies, and do not use anything whatever externally. In bronchial pneumonia in children I have treated many cases in the last two years, with the alkaloids and calcidin and every patient was, I think, out of danger in less than seventy-two hours of treatment. It takes seven to ten days with the "regular" remedies and we then lose 40 per cent under two years' old; but that time and treatment is a matter of the past with me, and should be with every one.

I. N. MEYERS.

Speedwell, Tenn.

[It is hard to tell from the doctor's description whether an overdose of aconitine was given in this case. We think not—but care, watchfulness and "dose enough" will always give us safety.—ED.]

IS IT CONSTITUTIONAL?

I wish to take issue with a statement made in your November issue, page 1414, on "Reciprocity." If you will turn to the national constitution, Article 1, Section 8, Paragraph 3, you will find that Congress has the power "to regulate commerce among the several states." In commenting on this clause, Andrew W. Young says: "Commerce, in a broad sense, as used in this clause by the constitution, means not only trade by sea and land, but all intercourse."

Again, Article 4, Section 2, Clause 1: "The citizens of each State shall be entitled to all the privileges and immunities of citizens in the several States."

Again under amendments, Article 13, Section 1: "No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States."

In regard to constitutionality, I think that the above quoted parts from the several states do not give authority for prohibiting a physician properly registered in one state from practising in any section of the United States.

E. E. Lusk.

Keota, Ia.

The practical thing for us to do is to work for *practical* reciprocity—and this we all ought to be doing.—Ed.]

A HAPPY TENNESSEE DOCTOR

On this page we show a picture of the home and family of Dr. J. T. Graham, of



DR. J. T. GRAHAM AND FAMILY
Taken in front of his beautiful Tennessee home

[Possibly you are right, Doctor, but to us all these quotations mean only that in the enforcement of local or state laws a resident of another state shall not be discriminated against and shall be treated exactly as though he were a resident of the state where he may temporarily be residing. According to your interpretation a man who had paid his dog license in Indianapolis might turn the "critter" loose on the streets of Chicago with the expectation that the Indiana "medal" would save the dog from the pound. But why discuss it?

Booneville, Tennessee. It is quite evident that the doctor has taken the President's injunctions concerning race suicide to heart. He has a family of which any man ought to be proud, and he gives an example which many a doctor might emulate.

Dr. Graham writes us that he has practised twenty-six years in all, having received his medical degree from Vanderbilt University. He has a good intelligent people to practise among, and there are good schools and churches and all the other things which make life worth living in his community.

The country is rich—fine for farming and stockraising. Altogether his "lines have fallen in pleasant places." With a splendid family, a good home, a good income, good practice and good friends—what more can one wish? Under such conditions life should move along sweetly indeed. And we know, from looking upon the doctor's face, and those of his family, that it does.

"Here's to your good health! May you live long and prosper!"

DOCTORS: OLD AND NEW

The following splendid tribute to the "old-time doctor"—with an interpolated little "knock" of the present-day species—was sent us by Dr. J. H. Lowrey, of Neola, Iowa. It was written by Bailey, of the *Britt Tribune*:

What a difference there is between the old-time doctor and the modern M. D. The old doctor used to come out to the farm on horseback, bringing his pills and potions in a hand-bag. All the children ran to greet him, he was like one of the family. He was nurse, physician, friend and mentor. He tied his horse to one of the pillars of the porch, and some of the "kids" put it in the barn, and rubbed it down, and put blankets on it, for the lives of many of us depended at times on the speed of the doctor's horse. The longest word that he used was not more than three-quarters of an inch long, and all knew what it meant. Sometimes he would stay a day or two and watch the symptoms of the patient. No one had pneumonia then, it was lung-fever; no one had appendicitis, it was bellyache; no one had lumbago, it was lame back; no one had Bright's disease, it was a misery. No one was sunstruck, they were drunk. No one had heart-failure, they died from natural causes. They did not open a man to see what ailed him till after he was dead, and thus saved him from the extra pain; and if they left their instruments inside of him, he never "kicked" if the doctors did not.

Your old-time doctor carried a few bottles containing decoctions, preparations, tinctures, panaceas and potions; salve for old sores, cuts and bruises, and ointment for itch and burns. If a man broke his leg, they never reduced the fracture, they simply "set" the leg. When a baby was born, all the use they had for a doctor was to examine it after it was dressed and see if the "soft spot" in its head was in the right place, and if not, to "fix" it. If you got into a fight and got your head cut open, he did not dress the wound, he simply sewed up the gash and advised you to drink more home-brewed beer and less store whisky.

When he got sick himself, and his brother doctors met in consultation and told him he was going to die, he told them he would live to dance

on their graves. And he did. He kept alive by grit, and showed other people how to do the same. He could sleep riding in a saddle, and he never presented a "bill." When he needed money, if you had it and would not pay him, he would get off the horse, give you an all-fired good thrashing and make out a receipt in full; the next man paid without whimpering.

He was a pillar in the church and the friend of everyone. He could sing in the choir, pull teeth, work out his poll-tax on the road, and tell the best story of anyone in town. His wife knew as much about medicine as he did, and sometimes more. If your tooth ached very bad and the doctor happened to be gone she would pull it for you, then pat you on the head and call you "poor boy" in a tone of voice that made you want to have another one pulled, and then she would not let you pay a cent for it either.

God bless those old family doctors! We don't know whether they ever saw a college or not, but they eased more dying people to shuffle off easily, and helped more living ones to enjoy life, than any other members of society. They did not meet and conspire to get the largest amount of money for their services, whether it was earned or not; they did not work legislatures to get their claims preferred to those of all others; they took their chances in the battle of life. And a whole lot of heaven came to them on earth in the consciousness of good deeds done and the love of their fellow men.

The modern physician seldom gets into the hearts of his patients as they did in those olden days. There is more commercialism in every trade and profession than there used to be. The dollar stands first, and the one who hasn't got it must take second place. The automobile is outwinding the saddle-horse, the dentist must attend the teeth, a chiroprapist fixes the toes, an oculist attends the eyes, an aurist the ears, and a specialist takes care of the old sores and the chronic cases. The regular physician has nothing left but appendicitis and obstetrics.

Medical science has made great strides. They take a man's liver out and make him a wooden one that works better; they make him a wooden nose or a silver palate. They make a new lung out of a football, and take out about half of his inside works and have him feeling like a peacock with a wooden leg. They have discovered that man was made wrong in some respects, anyhow, to begin with, and that he is just as well off without a gall-sack, spleen, or more than one kidney as to have the whole shooting match to carry around with him for nothing. Sometimes they leave their working tools inside when they get done with them, but the next one that gets at him has taken them out, so far as the medical books have taken note.

The M. D. of today starts out with a string of words, describing a lot of new diseases, that are spelled so crooked that the notches on them would file a handsaw. He graduates, gets a diploma, a pill box, and a saw to cut the bones with, a lead pencil to write the prescription with, and he is fixed; all he wants is patience and patients. When he gets one, he begins to count the money, for his bill is a preferred one. The butcher who kept the fellow alive until the doctor graduated

can whistle for his pay; the clothier who kept his backbone from the winter's blast can do the same; the lawyer who kept him out of state's prison got it in advance, or else the fellow went, but all the rest can look on. The doctor has a thousand dollars' worth of college, forty cents' worth of saw, a pill box that cost five dollars at wholesale, and the earth is his with a mortgage on the hereafter. An editor has three or four thousand dollars' worth of machinery and his paper has kept the man from suicide by its optimism, yet he couldn't get within gunshot of a nickel, neither could the grave-digger, the undertaker or the tradesman until the doctor bill is settled.

The greatness of the old-time doctor has come down unimpaired to the present generation, until he is the only one that doesn't have to collect his pay. When he is called out he knows that is the oculist, aurist, chiropodist, will doctor what is "in sight." He has to deal with the "insides," and the longer the words he uses the tougher the disease is supposed to be, and the longer the bill. The dentist now pulls all the teeth, leaving the doctor nothing to pull but the leg; however, that is plenty. The automobile has taken the place of the old swaybacked riding horse, and the new dictionary-makers are working nights to keep up with the new words and then get behind. Men are born, marry and die as of old, and we don't see that they live to be any older than they formerly did.

The old-fashioned doctor with his saddle-bags has gone, but his memory is revered by thousands.

THAT ATTACK UPON H-M-C IN THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

The Journal of the American Medical Association, in its number for December 21, contained a bitter and vicious attack upon H-M-C (Abbott)—four pages of closely printed matter, equal to about twelve pages of *CLINICAL MEDICINE*. In variance from their preceding action of refusing us space for reply, the same was tendered to us on this occasion, we assume because so many American doctors have objected to this policy of throttling an antagonist (or one who for any reason may be objected to) without giving him an opportunity to present his side of a question. We have therefore prepared and submitted to *The Journal* an answer to this totally unwarranted attack upon us and have received the assurance that it will be published.

We should like to publish the entire discussion, both sides, to spread the whole thing before our readers, so that they could

fairly judge for themselves as to the merits of our cause, and see with their own eyes with what hatred and contemptuous superciliousness the attacks upon us are filled. But to give this fully, both attack and reply, would take a very large portion of this number of *CLINICAL MEDICINE*, much more than we can spare—for the mission of our journal is not to tear down, to enter into controversies, but to build up, teach helpful therapeutics, to represent the great unheard majority in their quest for truth.

In brief, *The Journal* attack is based upon two points: The assumption of the complete identity of hyoscine and scopolamine, and the assumption, based upon Hatcher's animal experiments, that cactin, having no digitalis or strychnine action, is therefore inert. Woven in with these two central points are carefully selected quotations from our literature, every identified or imagined technical error, every debatable question being brought insistently to the foreground and upon it the technical knowledge and argumentative skilfulness of our erudite critics, through months of labor, are exhausted.

In our reply we point out the following facts:

That we have never claimed *priority* of hypodermic anesthesia, our claims resting upon the superior quality of our true hyoscine preparation, and upon its introduction to the physicians of America.

That the chemical identity of absolutely pure hyoscine and scopolamine may be admitted, yet the real question is to determine which product is of the highest quality, as obtainable on the market, and which is, therefore, the most satisfactory therapeutically.

That Pharmacopeial tests, either in Germany or the United States, are not sufficient to determine, practically, the purity or impurity of scopolamine or hyoscine.

That the impurities are the dangerous apotropine and the optically confusing atropine, and that *both are ignored by the Pharmacopeias and our critic.*

That the light-rotation tests, by which these impurities are recognized, *are not given*

in the Pharmacopeias or referred to by our critic.

That the dangerous side-effects of scopolamine are evidently due to the apoatropine, and that in all probability the early deaths and bad effects were due to the use of a drug filled with this impurity.

That a scopolamine of low optical rotation and therefore probably contaminated with apoatropine is still obtainable on the market.

That hyoscine from hyoscyamus, as tested by us, does not show the same degree of optical variation, as scopolamine from scopolia, and is of remarkably uniform quality—therefore to be preferred.

That we have purchased from Merck and Company and from other sources and use only true hyoscine from hyoscyamus, absolute evidence being submitted—our critic insinuating that *we* really have used scopolamine.

That cactin is what it is claimed to be a concentration of *cactus grandiflorus*.

That cactin is prepared by us from a superior, purified, concentrated liquid preparation made for us in large quantity direct from especially selected green cactus of the proper variety by the William S. Merrill Chemical Company.

That the therapeutic action of cactin is identical with that of cactus, the active principles having been studied, but that as yet their range of activity is undetermined.

That more is known of the chemistry of cactus than our critic has as yet determined, a glucoside being known to be present and probably an alkaloid.

That Hatcher's studies are indeterminate, proving nothing new or unknown whatever; and that while no manufacturer has ever before undertaken investigation of this product we did engage Matthews of Chicago University to do this work for us.

That Matthews, after taking our money (he has since returned it) and making a preliminary favorable report, suddenly turned his resources over to our enemies, without consulting us and without mak-

ing us a detailed report of the work he had done under our orders.

That I am having careful research work done on cactin, and that while I will not be stampeded in my efforts I purpose to cover the ground carefully, both from the clinical and pharmacologic standpoint, and, as nearly as possible, know all there is to be known about this product, in which I have great confidence.

That I am supported in my faith in H-M-C by the enthusiastic testimony of thousands of physicians, many of them members of the American Medical Association—more and higher in its real ranks than my misguided critics would believe.

That with all my work for the uplift of the doctor and with all my cooperation in the suppression of quackery and fraud I have received at the hands of the Council on Pharmacy and Chemistry and the editor of *The Journal*, Dr. Geo. H. Simmons, only slurs, sneers and abuse—never a particle of encouragement or help, either directly or indirectly.

That I am not submissive to abuse, but yet genuinely anxious to improve my work in every possible way and shall welcome suggestions to that end.

That all I ask is the "square deal"—and that I am willing to rest my case with the doctors of America.

Doubtless this article will be warmly received by the Council. Further discussion of it may then well wait till we know what disposition is made of it in the columns of *The Journal*. We can all bide our time. Meanwhile, if any of the readers of CLINICAL MEDICINE desire to see a full copy of our reply to *The Journal's* attack it is at their disposition for the asking.

Our answer is in their hands. When we see how they treat it and us we shall then know how further to treat them.

LATER: Since this has been prepared for the press our article has appeared in the *J.A.M.A.*, but it has been cut and "edited" so that things properly critical of their position, evidence of manifest error, misquotations for purpose, etc., and our appeals for fair play, do not appear. This fact,

and the unfair and sneering tone of the comment, call for further consideration. We shall take up this matter later.

W. C. ABBOTT

Chicago, Ill.

A LETTER FROM DR. VAN METER

We print below a letter received from Dr. B. F. Van Meter, in which he objects to some statements made in the columns of *CLINICAL MEDICINE*. Because we believe in giving every man an opportunity to tell his own story we have opened our columns to this letter, although it is an unfair presentation of the matter at issue, at least in our opinion. In order to get this letter into this number we have been compelled to hold the forms of *CLINICAL MEDICINE* for several days:

THE VAN METER CASE

In the December number of *THE AMERICAN JOURNAL OF CLINICAL MEDICINE* on page 1509 and 1510 appears the following editorial comment on a letter from a correspondent:

"Referring to the Van Meter case, we just want to ask the question, whether it was altogether fair in him to take a moribund patient, use an anesthetic he had never previously employed and did not believe in (considering it "too dangerous"), leave the administration in the hands of a nurse who had never used the anesthetic before with the simple instructions to give three tablets one after the other, no physician being on hand at the time, then after the operation to go away, leaving the patient in the hands of the same nurse, again no physician at hand, and with (we assume) no instructions which would enable her to recognize an emergency such as Dr. Walker describes, and after all this to ascribe the death to the H-M-C?"

As the editor of *CLINICAL MEDICINE* plainly refers to me and to a case with which I was connected, I wish to make the following statement: The patient in question was taken by Dr. Center, the family physician, to Dr. J. A. Stucky of Lexington, by whom I was called in consultation. I made a provisional diagnosis of sarcoma of the parotid and advised an operation. Dr. Center was to let me know later on regarding it. He finally called me up, saying that the patient desires to have me operate and that he (Dr. Center) wanted to use H-M-C as an anesthetic. I told him that I had never used it and that it had never appealed to me. He replied that he had used it in a few cases and that he was pleased with its action, and, for the case in hand, he considered it safer than ether. I replied that I would not use it as I was ignorant of the best method of its application, but that if he desired, I would consent to his using it. I met him at the hospital by appointment and introduced him to the head nurse of the ward, remarking specifically to her at the time, "You will take all

your orders with reference to this anesthetic from Dr. Center." She took her order book and wrote at Dr. Center's dictation the directions as to how and when the tablets were to be administered and how many were to be given. As to the condition of the patient, he was walking about the streets the day before the operation and walked to the hospital unassisted. In my opinion, he would have walked out again if ether had been used. The operation turned out to be a very simple affair, being simply the enucleation of a tubercular lymphatic gland within the parotid gland. Dr. Center congratulated me on the operation after it was over and stated that the patient "would sleep five or six hours and then wake up and ask for 'a meal of victuals.'" I said, "I hope so, but I don't like the fact of his being so blue." The patient was put back to bed and the collapse occurred about two hours after the operation. The house surgeon had counted the patient's pulse and respiration thirty minutes before the collapse and was present almost immediately when it occurred. Dr. George P. Sprague, one of the best men in our city, was in the ward at the time of the collapse. He at once ordered a hypodermic of strychnine and himself carried on the artificial respiration as long as there seemed to be any hope.

In the light of this statement, which can readily be proven by the head nurse, the house surgeon and other witnesses, it will be seen that the statements of the editor of *THE AMERICAN JOURNAL OF CLINICAL MEDICINE* are incorrect on the following points:

- (1) The patient was not "moribund."
- (2) I did not use an anesthetic that I "had never previously employed and did not believe in." The anesthetic was administered by Dr. Center, who stated that he had used it in a number of previous cases.
- (3) I did not "leave the administration in the hands of a nurse who had never used the anesthetic before, etc." The same nurse had nursed a case for Dr. Stucky the week before.
- (4) The patient was not left "in the hands of the nurse with no physician at hand." The house surgeon saw the patient just before the collapse occurred and both he and Dr. Sprague were at the bedside almost immediately.

The entire statement of the editor of *THE AMERICAN JOURNAL OF CLINICAL MEDICINE* is based on ignorance of the facts and unwarranted assumptions. The only possible point of criticism for myself lies in the fact that I allowed myself to be persuaded by the family physician and allowed him to use an anesthetic in which I had no confidence, and for the makers of which I had no respect. But at that time I did not know as much about "Brother" Abbott and The Alkaloidal Company as I do now. With my present knowledge of H-M-C there are not enough family physicians in America to persuade me to repeat the dose.

Very truly yours,

B. F. VAN METER.

Lexington, Ky.

[We have noted with some interest and amusement that Dr. Van Meter's letter and the report just presented, while both typewritten, are decidedly different in appear-

ance, style, and in every other way. In the first place, his letter presents numerous peculiarities of spelling, and is written on the same typewriting machine and with the same "lay-out" that Van Meter has used in previous correspondence, while the article which accompanies it, the one just preceding, is an exact duplicate, both in paper and machine-work, *as well as in its distinctive style*, of the copy of his alleged original report published over his name in *The Journal of the American Medical Association*. This peculiarity, taken with the statement of Dr. Van Meter that a copy of the material published above is now in the hands of Dr. Simmons of *The Journal* of the Association, makes us smile.

We are willing to give every man who thinks he has a grievance against us a fair hearing in these columns. If there are more of this class let them come forward. We are glad to have disagreement if it is based on truth, for only in this way can we get the nearest right, which is our only aim and our most earnest desire.

In connection with this report it may likewise be of interest to our readers to know that our answer to the widely heralded attack on us, made at Torrent, Ky., last summer by Holloway, Van Meter and others, was refused space in *The Kentucky Medical Journal*, which, however, printed an inaccurate and unfair account of this attack, which has been reprinted at somebody's expense and distributed where it seemingly was thought it would likely produce the most disastrous results to us.

In order that our readers may have the evidence before them we reprint Dr. Center's letter from our November number, in which, likewise, if they care to refer to it, we published Dr. Van Meter's report in full, which he now suggests our republishing. Dr. Center's letter follows:

DEAR DOCTOR ABBOTT:

Your letter of inquiry as to the death of J. H. E. at Lexington, Kentucky, is at hand. I was there and witnessed the whole thing, and all that Dr. Van Meter has said in his statement is true but one: that is, *I did not give the medicine*. I did ask Dr. Van Meter over the 'phone, the evening before the operation, to use the H-M-C, and later the same evening we met at the Good Samaritan

Hospital and ordered the nurse to give the H-M-C, as stated by Dr. Van Meter. When I got to the hospital the next morning the third dose had just been given, and the patient was sound asleep and ready for the table when the third dose was given.

Mr. J. H. E. was pale and the postmortem revealed that he did not have much blood nor muscle, but when Dr. Van Meter and I left the hospital I didn't see any reason for alarm. But there is one thing I have thought of since then. That tumor was attached to the top of the windpipe, and when the tumor was pressed he would cough up the tubercular matter in varying quantities, and I believe the tumor was discharging into the windpipe. Now, considerable serum and blood may have run in from the wound, into the larynx, and helped to cause the death.

I don't believe the H-M-C was the cause of death any more than chloroform or ether would have caused death; and really, he had lived about as long as he could without an operation. The doctor asked me what I had against him that made me bring such patients to him; and I told him that patients that could be cured I cured at home, and patients that could not be cured I brought to Lexington to die. And in the consultation Mr. J. H. E. asked Dr. Van Meter if he considered the operation serious, and he told him that it was, but it was his only chance for life and that he might die on the table, but if he survived the operation he might recover. And I must confess that I acted on my best judgment, and if there is any blame to be on any one, let it fall on me, not on Dr. Van Meter, for he told me that he knew nothing about the H-M-C at all. I am still using the H-M-C with excellent results and shall continue to use it until it disappoints me. Then, and not until then, I shall lay it aside.

Yours very truly,

G. M. CENTER.

This letter was first sent to *The Journal of the Association*, presumably about as it appears above, but it was not accorded even the courtesy of acknowledgment. Upon inquiry of Dr. Center as to what disposition was made of it by Dr. Simmons, Dr. Center wrote: "I did not get a word from him or anyone else in regard to my article sent them for publication."

It seems pretty clear that our side of this controversy is not welcomed by the official organs.

Now we want to ask you to contrast carefully the statements made by Dr. Van Meter and those made by Dr. Center, and more important still, the spirit shown in the two letters. Van Meter's is full of hatred, vindictiveness and anger; Center's, while stating his relation to the case clearly and showing that he had no part whatever in the actual administration of the remedy or any care of the case, before or after operation, attempts

rather to shield Van Meter, who in the letter herewith printed attempts to shift the entire responsibility for its quite apparent mismanagement to the shoulders of others.

The points which strike us upon reading Dr. Van Meter's letter are about as follows:

1. That from the beginning he was prejudiced against the H-M-C compound, apparently knew nothing whatever of its action, and made no attempt to familiarize himself with it.

2. That apparently knowing nothing of its contraindications, such as alcoholism, or its possible dangers in this special case, he still permitted the use of the maximum dose (dangerous in such a case) and that no physician was in attendance when the anesthetic was given.

3. That in spite of the fact that the case was operated upon in his own service, and that therefore he was really responsible for it, he endeavors to shift the entire responsibility upon Dr. Center.

It is possible that this death should be ascribed to the hypodermic anesthetic, though Dr. Center says: "I don't believe the H-M-C was the cause of the death any more than chloroform or ether would have caused death." We have never minimized its dangers, or asserted that it was free from danger. On the contrary, we have pointed these out repeatedly, urging physicians to use this powerful combination (as well as other anesthetics) with the utmost care, especially until they have acquired familiarity with it. Dr. Van Meter acquired no such familiarity and didn't try to—wont try to, he says, and if this is his style we do not blame him. There have been many deaths from morphine alone, from every powerful toxic drug, but is that any reason why they should not be used? Certainly not—simply an added incentive to care, to study of their action, to familiarity with their therapeutic uses. Has Van Meter satisfied these conditions concerning H-M-C? It is hardly necessary to ask that question twice.

If any man expressed his sentiments toward you as this man has toward us, would you accept him as a judge or juror in any case in which you were a party inter-

ested? Granting him the intention of telling "the truth, the whole truth and nothing but the truth, so help him God", would you accept his testimony on the witness-stand without allowance for the personal prejudice so frankly acknowledged?

In Van Meter's dislikes the readers of CLINICAL MEDICINE have no interest whatever. All they care for is whether H-M-C is or is not a useful agent for their use. If it is good, they cannot afford to leave its advantages to competitors.

Dr. Van Meter writes us that he is sending this letter to Dr. Simmons of *The Journal*, to be held till he finds out whether we are going to publish it or not.

In one point we heartily agree with Van Meter—and that is in the confidence he apparently feels as to the welcome that he will be given by the editor of the *J. A. M. A.*—ED.]

CALCIUM SULPHIDE.—STRICTURE.— NEPHRITIS

Of all the medical journals I receive I consider CLINICAL MEDICINE the most practical and best. Soon after receiving the first number I also received a copy of Abbott's "Alkaloidal Digest." Both the "Digest" and THE CLINIC are full of valuable suggestions. The "Digest" contains special articles that ought to be worth hundreds of dollars every year to any doctor.

Calcium sulphide, for instance, will be found nearly a specific in whooping-cough, acne, boils and urticaria. In scrofula it is valuable. In tuberculosis it will loosen the dry cough, increase secretion and favor expectoration. I have known cases in which cavities had formed in which a short use of calcium sulphide caused such an improvement that the bacillus entirely disappeared from the sputum and the patients recovered. (Of course every doctor should know that most of these tubercular cases need iron for the blood, nux vomica or strychnine for the heart, with plenty of good air, eggs, milk, etc.)

In urethritis calcium sulphide, gr. 1-6 or 1-3 every hour, with an injection of potas-

sium permanganate, 1-4 grain to the ounce of water, used four times a day, is very successful. When however the urethritis is caused by a cystitis, nephritis or phosphaturia, it should be immediately discontinued as it will aggravate all these troubles and fail to remedy the urethritis. When urethritis is caused by any one of the above mentioned causes it must first be overcome before attempting or expecting to do much for the urethritis.

Often we read articles in medical journals in which the authors advise in chronic urethritis the use of sounds, and all these doctors, by recommending the treatment, confessed that they had reached the limit of their therapeutic skill. Generally the use of sounds does no good and often is positively harmful. It simply makes business for the experienced doctor, whom it often takes months to overcome the injury caused. Occasionally patients are so injured by this sound-treatment that they will remain sufferers during the remainder of their life. Even in cases of stricture it is needless to pass sounds into the deep urethra. Doctors who do so forget that the Great Architect in His wisdom so constructed the deep urethra that stricture, very, very seldom, if ever, is found in it. Even makers of instruments for measuring and cutting stricture make all these instruments perfectly straight. Consequently it is impossible to pass them through the deep urethra. Moreover, hospital records prove that out of 258 strictures 52 were in the first quarter inch of the urethra, 63 in the following inch, 48 from 1-4 to 2 1-2, 48 from 2 1-4 to 3 1-4, 19 from 3 1-4 to 4 1-4, 14 from 4 1-2 to 5 1-4, 8 from 5 1-4 to 6 1-4, 6 from 6 1-4 to 7 1-4 inches. In another series of 357 urethral strictures, only five were deeper than five inches.

It is claimed that there has been an alarming increase of nephritis within the past fifteen or twenty years. Experienced observers attribute this increase of Bright's disease to the improper use of methylene-blue and especially salol in the treatment of so-called "clap," cystitis, rheumatism and other diseases. It is evidently true that

these various phenol compounds directly and indirectly kill every year their thousands. Unfortunately no statistics are available to prove the above statement.

GEO. S. WILSON.

Boston, Mass.

[To one class of phenol compounds the doctor's criticism certainly will not apply—the sulphocarbolates. We have never known of a case where their use did harm to the kidneys, on the contrary, we are convinced that by reducing intestinal toxemia, thus preventing the formation of poisons to be eliminated by the renal tract, the use of these salts actually prevents nephritic complications. That's our experience.—ED.]

NOT A CONVERT—BUT LIKES US JUST THE SAME

I have read the January number of your journal with much interest. Although not a convert to alkalometry, one cannot help but admire the dynamics, the splendid energy and vim that lies behind its origination; and, too, the broad charity that seems to pervade its pages towards your fellow creatures of the order of Esculapius. I cannot longer withhold my congratulations. Wishing you success, if you are right, Doctor (which is hard to disbelieve), I am,

Yours most truly,

F. B. CULLENS.

Ozark, Ala.

[That's a sample. There are dozens of them. Hundreds of them. See the cover "mortise" this month. We wouldn't be just human if our hearts didn't warm to friendly, encouraging letters like these.—ED.]

NOTE: A MAILING LIST

Dr. Waugh is preparing a mailing list of his friends and former students to whom he can send reprints, etc. Any reader of CLINICAL MEDICINE who desires to have his name placed on this list, can do so by sending the name and address to Dr. Waugh, at this office.



CLINICAL · MEDICINE POST-GRADUATE · SCHOOL *of* THERAPEUTICS

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PART I.—LESSON TWO

ACTION OF REMEDIES

LOCAL MEDICATION

Irritation and Counterirritation.—

There are certain agents which are capable of exciting activity (and especially vascular activity) in a part, when they are applied locally, and which are used to relieve some abnormal action going on elsewhere within the body. This artificially excited action was formerly supposed to relieve the severity and reduce or shorten the course of the preexisting malady. This method of treatment has been denominated variously, according to circumstances, as *irritation* and *counterirritation*.

Action on Circulation.—Any dilation of the cutaneous branches and increased blood-flow in their superficial distribution will directly diminish the volume of the blood-current in the deep-seated vessels. After inflammation of the pleura, at least of the costal pleura, the application of irritants to the skin of the chest, such as heat or vesicatories, will dilate the cutaneous terminations of the intercostal arteries, and at the same time diminish the blood-supply to the *pleural* arterioles, thus lessening the vascularity of the inflamed areas.

In the same way dilation of the cutaneous vessels over an articulation will be followed by lessening of the blood-flow in the *articular*

branches, and in the arterial trunk common to both.

We all know that plunging one hand into cold water will lower the temperature of the other hand. The more fully we can comprehend this the better can we understand how it may be that from external counterirritation we may derive a beneficial effect in cases of internal inflammation, even when the vascular supply of the inflamed parts is not derived from the same arterial trunks as is that of the cutaneous surface operated upon.

Cutaneous irritants affect the circulation generally, probably as follows: (1) A direct stimulant effect downward to the heart. (2) An effect upon the peripheral arterioles, by dilating them and lowering the blood-pressure in the arteries, thus enabling the heart to contract more easily in the face of a lessened resistance.

Action on Nervous System.—In the articulation the deep-seated and cutaneous nerves spring from common trunks; consequently the application of analgesic agents to the peripheral extremities of the superficial distribution exercises some kind of effect upon the deep-seated terminations. That such is the fact is unquestionable, but it is not yet clear how this end is brought

about. Either there is some reflex action induced or some deadening effect is achieved which counteracts the pain—producing irritation of the deeply seated terminal fibers, possibly in the common trunk.

The application of the *epispastics* to large areas of the surface for a brief time (so that they are rubefacients rather than vesicants) in cases of collapse, shock, or even the typhoid condition, is a well-established practice. Dermal irritants act as general stimulants, and they are indicated in states of depression rather than in advanced exhaustion; their application should be brief and accompanied by the exhibition of other stimulants somewhat freely given.

THE COUNTERIRRITANTS

Caustics are medicines which destroy the tissues to which they are applied. They incite inflammation and vascular dilation in surrounding areas. Caustics are employed, first, to destroy excrescences on the skin and mucous membranes, and to effect the destruction or removal of malignant growths; second, to open abscesses, or to maintain a chronic irritation, or to stimulate ulcers, etc.; third, to destroy and prevent the absorption of the virus from the bites of rabid and venomous animals, and for the destruction of chancres and malignant pustules.

The following caustics act by *extracting the water* from the tissues: Arsenous acid, antimony chloride, carbolic acid, chromic acid, caustic potassa, caustic soda, mineral acids.

The following caustics act by *combining with the albumin* of the tissues: Burnt alum, copper sulphate, mercuric chloride, mercuric nitrate, mercuric oxide, silver nitrate, zinc chloride and zinc sulphate. Bromine acts by corrosive oxidation.

Vesicants and Epispastics excite more or less local inflammation when applied to the skin, the inflammatory condition being accompanied by an effusion of serum between the epidermis and dermis, that is, a blister. The principal vesicants are acetic acid, confined vapor of ammonia, cantharides, iodine, volatile oil of mustard,

rhur toxicodendron. Blisters are of use in rheumatic arthritis, endocarditis, sciatica, pleuritis, chronic pericarditis, neuralgia and many painful conditions.

Pustulants.—There are certain drugs which affect certain parts of the skin, for instance the orifices of the sudoriferous glands, in a special manner, and their action on these parts is such as to give rise to pustules rather than blisters. Drugs which affect the skin in this manner are called "pustulants." The following are the most important: Croton oil, silver nitrate and euphorbium. These are employed as local stimulants in chronic ulcers and facilitate the absorption of effusions, as in chronic synovitis or chronic stiffening of the joints. Pustulants are particularly employed to maintain a continuous though moderate irritation in chronic inflammations. They are used for the same class of cases as vesicants, but are preferable when it is desirable to prolong the local irritation without exciting so much inflammation.

Contraindications.—*Vesicants* are contraindicated usually in acute inflammations and in inflammations of the cutaneous tissues. Vesicants are not permissible in pregnancy, debility, purpura, or in extreme infancy or old age. They should not be applied over the scrotum or the mammary glands, or over bony prominences where the healing processes are apt to be retarded.

Rubefacients are drugs which, when locally applied, are intended to produce temporary redness and congestion of the skin. Some of them are vesicants if applied in full strength, and if their contact with the skin be sufficiently prolonged, vesication or even total destruction of the tissues may result.

The following are the principal rubefacient drugs: Ammonia, alcohol, arnica, camphor, capsicum, chloroform, ether, iodine, menthol, mezereon, mustard, oil of cajeput, oil of turpentine, volatile oils. Hot water and friction are also rubefacient agents. Rubefacients are used for their influence upon the skin itself, or for their effect on deep-seated structures. They are

efficient means of relieving neuralgic pains, conditions of nervous debility, nervous excitement, fatigue, and as an aid in narcotic poisoning, also to hasten the absorption of inflammatory exudates, to remove the swelling and restore the function of chronically inflamed joints, etc. Rubefacients should be applied with friction, as rubbing of the skin aids the action of many of them.

THE SKIN SEDATIVES

Emollients are substances which soften, relax and protect the tissues to which they are applied. They relieve pain and tension by diminishing heat and lessening the pressure on the nerves. The principal emollients are: glycerin, liniments, fats and oils, hot fomentations and poultices.

Demulcents are substances which soothe and protect the part to which they are applied. They are generally of a mucilaginous nature, and they are employed for their action upon the mucous membranes; while emollients are principally used upon the skin. Some of the important demulcents are flaxseed, slippery elm, marshmallow, licorice, sassafras-pith, etc.

Both emollients and demulcents are exceedingly useful agents to relieve irritation of the skin, in certain cutaneous diseases, by softening the skin and mucous membranes. They also prevent cracking or chapping from exposure to cold. They are also efficient agents to prevent bedsores.

Demulcents are employed internally with good results when there is an irritated or inflamed mucous membrane, whether of the respiratory, gastrointestinal or genitourinary tracts, as in bronchitis, gastritis, diarrhea, dysentery, cystitis, etc. Such demulcents as flaxseed, slippery elm, marshmallow, are very agreeable and efficient agents to quench thirst and to relieve irritation of the mucous surfaces in febrile affections.

Protectives are agents to cover and protect mechanically diseased surfaces from air, water, etc. Such agents classed as protectives are employed for their absorptive power of taking up by capillary attraction

any moisture or fluid present. They are useful agents as protective coatings to bedsores. The principal protectives are collodion, solution of guttapercha, solution of sodium salicylate, courtplaster and lycopodium.

The only official *cataplasma* or *poultice* is cataplasma of kaolin.

HOW TO MAKE AND APPLY A POULTICE

When a poultice is applied directly to the skin it must be allowed to become a little cool before the patient can bear it, and thus half of its advantage is lost. In order to relieve spasm, as in colic—intestinal, biliary or renal—to relieve inflammation of the pleura, the lungs, the liver and the other organs, we want to apply the poultice as hot as possible, while we protect the skin from being scalded.

In order to do this, especially when a linseed-meal poultice is used, a flannel bag should be prepared (a convenient size being 12 inches by 8 inches). This should be closed at three edges and open at the fourth; one side of it should be about one inch or one and one-half inch longer than the other. It is convenient also to have four tapes attached at the points which form the corners when the bag is closed, in order to keep the poultice in position. Besides this another strip of flannel should be prepared, the same breadth as the length of the bag, and long enough to wrap around it once or oftener.

Cracked linseed, bowl and spoon should then be got together, and the spoon and bowl thoroughly heated by means of boiling water. The poultice should then be made with fully boiling water, and rather soft. As soon as it is ready it should be poured into the bag, previously warmed by holding it to the fire; the flap which is formed by the longest side of the bag should now be turned down and fastened in place by a few long stitches with a needle and thread. It should then be quickly wrapped in the strip of flannel and fastened. It may be covered outside with a sheet of cotton-wool.

In this way the poultice may be applied boiling hot to the skin without burning;

the two layers of flannel allow the heat to pass gradually to the skin. As the moisture of the poultice soaks through them they become better conductors and the heat passes more quickly, but the increase is so gradual as not to cause any painful sensation whatever, but only one of soothing and comfort. In case the patient is very sensitive the nurse should rapidly pass a hand underneath the poultice from end to end, briskly rubbing the skin in this movement, repeating this until the first shock to the cuticle nerves has subsided. This rubbing and temporary cooling of the skin helps wonderfully to get the frightened patient—especially if a child—accustomed to the heat. The poultice thus prepared naturally keeps hot much longer, and the necessity for changing it is less frequent. The heat is still longer maintained by covering it over with oilsilk and folded flannel.

The difference between a poultice made in the ordinary way and in the manner just described is sometimes exceedingly striking. Its value is, perhaps, less marked in cases of inflammation than in those of spasm. We have seen patients suffering from intense abdominal pain, that were at once relieved by a poultice made in the way just described, although a succession of poultices made in the ordinary way had been utterly useless.

This way of making poultices is one of the minutæ of medical practice. It is now generally believed better practice to use the official cataplasm of kaolin than poultices of linseed meal, or bread, or other substances which may be full of germs and infect the individual. A linseed-meal poultice, however, prepared in the way above described, is of great value in many cases where poultices are indicated.

Fatty and Oily Substances may be used for either nutritive or soothing, or stimulating effects.

To the first and second classes belong codliver, lard, olive, almond, linseed, neats-foot, castor and similar oils. To the third class, the oils of tar, of cade, of white birch, and of juniper. They are applied either to the skin directly by pouring or by friction,

or by the mediation of compresses, bandages, etc., which are saturated or spread with the material to be applied.

Fatty substances are also applied in the form of ointments or pomades. They are compounded with various medicinal substances, according to the requirement of each case, such as the salts of mercury, zinc, copper and lead; and sulphur, chrysarobin, phenol, hyposulphurous acid, camphor, iodoform, balsam of Peru, extracts of opium, belladonna, etc. The products of petroleum refinement known as petrolatum, vaseline and cosmoline, though not true fats, are increasingly employed for similar purposes. These mineral fats, or paraffins, are particularly useful as vehicles for ointments for application on the various parts of the body, such as the scalp, when a more consistent salve pastes the hair to the surface in an unsightly mass.

Unguenta (ointments) are fatty substances intended to be applied to the skin by inunction. They are either soft or solid at ordinary temperatures but liquid upon being rubbed into the skin. They are generally rubbed over the skin, or may be rubbed into it. The medicating ingredients are combined with a vehicle of lard, lanolin or similar substance.

Ointments are made in several ways: first by fusion, second by incorporation, third by chemical reaction. Lard and hydrous woolfat are the best vehicles for an ointment when the active ingredients are to be absorbed. When the ointment is required for a protective, as for open wounds, soft paraffin, i. e., petrolatum, is a good vehicle, as it softens less at the temperature of the body. Benzoinated lard is often used to obviate rancidity. No ointment should be dispensed that is at all rancid. It should always be smooth and free from grittiness or irritating properties.

Glycerin is sometimes made use of as a component part of lotions and ointments. It should never be applied in its pure state to the skin, because it is too irritating. It is however very useful when diluted or added to lotions or ointments. When combined with starch it makes a series of com-

binations known as glyceroles, or glycerolates. These are pasty, semisolid substances which are capable of varied medication, as in the glycerole of the subacetate of lead. They are employed chiefly as protectives of the surface. Glycerin when used in a fluid soap is an exceedingly valuable agent when a milder effect is desired than is produced by the spirit of soap. Glycerin is also combined, in various proportions, with gelatin to form a substance known as *glycerogelatin*. This is used as a vehicle for the application of remedies to the skin.

Pastes are prepared with kaolin, gum, lead, dextrin, glycerin, and other substances. They are especially valuable in the exudative affections where salves are often either not well tolerated or actually prove irritating to the skin. Pastes when applied to such surfaces form a protective and adhesive dressing, which may be medicated as desired. Hyde gives the following details respecting the availability of pastes for different ingredients:

Lead is best used as an acetate, either in a simple paste or with dextrin; the carbonate, oleate and iodide combining well with both. Zinc oxide combines well with kaolin, lead, lard, starch, dextrin and gum. Sulphur combines well with the three last-named, poorly with kaolin, and not at all with lead. Ichthyol suits well with all save with the gum pastes. Naphthol, calomel, corrosive sublimate, red and white precipitate, carbolic acid, chloral hydrate, camphor and salicylic acid can be incorporated with all, the last-named in smaller proportion with gum paste.

Tar is better united with starch, dextrin and gum than with the others. Iodine and iodoform naturally do not suit well with the starch and dextrin pastes. Chrysarobin and pyrogallol unite with kaolin and gum pastes, but acids in general destroy the adhesiveness of the gum pastes and should not be added to them. Fatty and soapy substances, if commingled in large amounts with these pastes, injure their special properties. The following formulas for special pastes are given:

Formulas for Special Pastes

1. Kaolin, glycerin, of each 30 parts; zinc oxide, solution of subacetate of lead, of each 20 parts.
2. Zinc oxide, 40 parts; red oxide of mercury, 2 parts; mucilage of acacia, glycerin, of each 20 parts.
3. Prepared chalk, sulphur (sublimed), of each 2 parts; liquid tar, 8 parts; starch, 20 parts; mucilage of acacia, glycerin, of each 15 parts.
4. Salicylic acid, 20 parts; glycerin, 20 parts; mucilage of acacia, 30 parts; castor oil, 10 parts.

Oleates are solutions of oleates or alkaloïds in oleic acid. They are intended for endermic medication. They are applied by inunction, when the oleic acid favors the absorption of the medicinal agent, the oleate, in solution. When it is not desirable to administer remedies by the mouth, the oleates afford an effective form of medication. The solid oleates are either dry powders, well adapted for protectives, or dusting powders, or soft, pliable masses to be applied in the form of ointments or plasters.

The U. S. P. contains five: Oleate of atropine, 2 percent of atropine; oleate of cocaine, 5 percent; oleate of mercury, 25 percent of yellow mercuric oxide; oleate of quinine, 25 percent; oleate of veratrine, 2 percent.

Emplastra (plasters), are mixtures of various fatty or resinous solids of such high melting point as to be sometimes almost friable when cold, but rendered adhesive by the warmth of the body. The vehicles of plasters are lead plaster; resinous substances made adhesive by admixture with the medicinal ingredients; and simple plasters, such as those made with gelatin. The making of plasters generally does not differ materially from the process employed for ointments and cerates, since they are prepared by melting the various substances and incorporating the medicinal substance last. Lead plaster, however, is prepared by boiling together lead oxide with an oil until saponification is completed, the result being an oleopalmitate of lead and free

glycerin. Plasters are employed when it is desired to exert a more or less continuous effect upon the skin, and are thus necessarily consistent and desirable.

Plaster-Mull is a thin cloth made impervious with rubber or gutta-percha tissue, upon which is spread or painted a medicinal agent in liquid form. It is intended for local application. These plaster-mulls are efficacious and, as a rule, well liked by patients.

Collodions are solutions in ether or ether-alcohol (also acetone) of pyroxylin, i. e., soluble guncotton. Upon evaporation of the solvent the remaining film excludes the air, thus protecting the abraded surfaces. Collodion is used also as a vehicle when a prolonged local effect is desired. It not only protects but contracts the surface of the skin to which the application is made. By the use of collodion special mixtures, such as bismuth, cantharides, oxide of zinc, white precipitate, iodine, and other substances may with advantage be applied to the surface and the action of each application definitely limited to the margins of a single patch of disease. The addition of 2 percent of castor oil yields the so-called flexible collodion. Solutions of india-rubber are similarly employed.

Dusting Powders are used to protect the surface of the skin or to produce an astringent or antipruritic effect. Dusting powders are usually composed of starch, magnesia, lycopodium, bismuth subnitrate, boric acid, and similar substances. As absorbent powders the starchy substances are open to the objection of forming little pasty rolls or cakes when wet with serum or sweat. Lycopodium, which is seen under the microscope to consist of irregularly globular pollen sporules, never behaves in this way, and is for that reason deservedly popular. *Stearates* are combinations of zinc oxide and lead oxide with stearic acid, in powdered form; useful as dusting powders.

EXTERNAL METHODS OF APPLICATION

In order to utilize the absorptive power of the cutaneous surface for therapeutic purposes various methods have been adopted:

The skin possesses two pathways for the absorption of drugs, namely, through the epidermis and through the cutaneous glands. Whether drugs actually penetrate the epidermis is very doubtful, and it is found that the more effectual ways of securing absorption through the skin are those which appear most likely to draw the drug into the interior of the cutaneous glands, such as inunction with mercurial ointment; exposure of the skin to the vapor of calomel fumigation; or solution of the drug in chloroform as a liniment, or with one of the oleates. By these modes of administration we avoid any disturbing influence of the drug on the digestive organs, and young children can be easily put under treatment. The disadvantages consist in the uncertainty of the drug itself, and in the unpleasantness of greasy and sometimes dirty applications to a large surface of skin.

The following means are usually adopted for securing cutaneous absorption: Fumigation; inunction of ointment or liniment; endermic, by means of the application of blisters to a surface; and by means of a hypodermic needle and syringe—the hypodermic method. These are usually effectual ways.

Plasters continually applied, medicated poultices and fomentations: These are the doubtful ways.

Inunction consists in an outward application of the medicinal agent, without abrasion of the cutis, and forced absorption through the process of "rubbing in." The horny epidermis, however, presents an effectual barrier to the absorption of many drugs, and the endermic method has been found more active. This plan consists in producing, by means of a blister, a raw surface which readily absorbs the medicinal agent—morphine, strychnine, atropine, quinine, etc.—with highly marked effect. The process is somewhat painful, and necessarily slow in action, being now almost wholly superseded by the hypodermic method. The blister raised by ammonia offers much less resistance to absorption than that induced by cantharides.

Fumigation.—Mercurial fumigations are very successful in syphilis. Calomel, which is prescribed in most cases, gives constant results. Some employ dry fumigation; others maintain that the therapeutic effects of mercury are increased by steam. This mode of administering mercury is considered by many physicians the best and surest way of eradicating syphilis. Moreover, it affects the general health less deleteriously, disturbing neither the functions of the stomach nor of the intestines. Ten to twenty grains of calomel are used at each fumigation. The fumigations sometimes produce so much weakness and prostration that they cannot be continued. There can be no doubt that many cases of syphilis, rebellious to other treatment, yield to these fumigations. Sometimes only a portion of the body affected with syphilitic rash is subjected to calomel fumigation.

INTERNAL MEDICATION

Theory of the Therapeutic Drug Action

It was once said that the practice of medicine consisted in "bleeding down to the brandy-point, and brandying up to the bleeding-point."

Sedation and Stimulation.—In one shape or other this doctrine of sedation and stimulation, the incitation or the depression of some one or more of the vital functions, of the activity of one or the other set of cellular structures of our bodies, constitutes the fundamental conception of therapeutic action. The ingenuity of successive writers has been expended in devising new terms in which to express their conception rather than in spinning new theories or making new investigations.

The enormous importance to be ascribed to the caliber, and consequently the capacity of the blood-vessels, has given rise to the hypothesis of the existence of vasomotor nerves, vasoconstrictor, vasodilator, or both. No anatomist has as yet demonstrated the presence of these nerves. The action of very minute doses of atropine and of morphine in aiding the relief of constipation has led to the no less conjectural hypothesis of the existence of an inhibitory system,

which being paralyzed by these minute doses, that suppositious obstacles to the free action of the bowels is removed.

We find applied therapeutics ready, therefore, to avail itself of every new advance that is made in physiology, and even to keep a little ahead of it if desired, and to show the way in which investigation may prove remunerative.

Exceptions to the Rule of Sedation and Stimulation.—An exception to this rule of action as to sedation and stimulation of the vital functions, may be found in the case of drugs which act through their chemical properties. This may be also said of a variety of local actions. Local action, it must be remembered, may go on upon the surface of the body, in the alimentary canal, within the blood-vessels, and even in the tissues.

Germicidal Action.—Another exception lies in the action of remedies upon parasitic organisms. This may also be termed a local action, possibly germicidal. Nevertheless, we are not clear as to the rationale of "germicidal" remedies, since these may possibly act directly and by intoxication destroy the parasite, or through chemical action, as glycerin destroys the embryos of the trichina. Or they may act by inhibiting some of the functions of micro-organisms; such as their reproduction, toxin-production, etc. Or again, they may act by increasing in some unknown manner the vital resistance of the tissues, or by chemically or otherwise neutralizing the toxins, or in some other as yet unknown and unsuspected manner.

Insufficient Observations.—At every step in our inquiry on drug-action we are faced by the difficulty that observation of these agents has not been pushed sufficiently. Take for instance the action of tenicides: Even now it has not been definitely determined whether these remedies act upon the parasite or upon its host. What are we to do when we find that a child of two years harbors a tapeworm? If our remedies act upon the worm, it will require as much of a dose to destroy that worm in the child as in an adult. If they act on and through

the vital organs of the child, the dose should be regulated by the child's age, as with other remedies which are known to act through the vital functions. That so simple a point as this should still be unsettled shows how superficial and imperfect has been the study of drug-action.

Animal Experimentation and Clinical Observation.—Much of our knowledge of drugs has come through experiments performed upon animals; but in every case the results of such experiments must be confirmed and corrected by clinical trials upon human individuals before they can be made of practical utility. Otherwise we should be compelled to consider that morphine is comparatively harmless in any dose and that arsenic is only a useful and harmless cathartic, as dogs have received from 4 to 8 grains of morphine without apparent effect of any sort, and the only result following the administration to them of huge doses of arsenic has been laxation.

Much information has also been obtained from the administration of drugs to human beings while in health. Here also it is a question as to the exactness of this knowledge, as related to its application in states of disease; for it does not necessarily follow that a drug having a certain action in the state of health has the same action in disease conditions. For instance, digitalis may exhibit no action whatever if given to a healthy individual, whereas, when given in proper doses to a person suffering with any form of heart-disease which is amenable to its action, the effects are unmistakable.

Of some remedies lying on the borderland of therapeutics it is strongly asserted that they have no effect in health, but that they exert a powerful effect in certain conditions of disease. Among these we may mention *echinacea*. As yet its advocates have been unable to show any effect whatever when it is administered to a healthy individual; but in many conditions, such as that resulting from the bite of a venomous serpent, its effects are claimed to be remedial in a striking and unmistakable manner.

This leads us to the principal difficulty we encounter in the study of this recondite topic,

namely, that the physiologic experiments—that is, experiments made upon human beings in the state of health—on which our therapeutic classics were based, are with few exceptions not of recent date, but were made at a time when physiology had not progressed to the point it has now reached. These observations were usually limited to the circulation, temperature and respiration; in general, if these important functions were not perceptibly affected by the remedy, it was hastily pronounced "inert."

As an instance of what modern conditions demand in the testing of remedies we will cite the case of boldine. It has been found that when this remedy is administered in effective doses, it causes a marked increase in the excretion of urea. This points to the desirability of careful examinations of the urine for information as to the total daily excretion of each of its principal constituents, before, during, and after the administration of any remedy on trial. Such observations would be of inestimable value to us at present, now that it is understood that the study of the composition of the urine affords, somewhat similar information to that gathered from the inspection of the index of a volume.

The Internal Secretions.—The study of the internal secretions threatens to revolutionize physiology; and we must remember the position in which this matter stood, and still stands, in relation to our knowledge of the cell and of cell-action. The conclusions reached by Dr. Sajous, after enormous labor in research, correlation and deduction, from many works gathered from many widely scattered sources, bid fair to change the entire basis of our conception of physiologic function, and consequently of therapeutics.

The profundity of Sajous's work necessarily impedes its speedy acceptance, or even its serious consideration; for the number of those capable of comprehending it, and even giving the requisite time to it, is small. But the least that can be said by any capable observer who has examined his theory is, that Sajous has earned the right to a hearing; and this ensures the acceptance of what is assimilable in due time. An article upon

Dr. Sajous's theories will appear in *CLINICAL MEDICINE* next month.—ED.]

Drugs Must be in Solution.—As recently pointed out in a thoughtful article by Dr. Joseph Clements, drugs act only through the vital functions. Drugs do not act as such on a dead body; life is essential to their activity. But how do they act?

In the first place it is evident that to become active, drugs must be in solution. Calomel may lie for weeks or months in the intestines, inert, with no action whatever; but when enough of it has been rendered soluble by chemical change its activity will be manifested.

Drugs taken into the alimentary canal must, therefore, first be rendered soluble, then they must be absorbed. It cannot truly be said that drugs are within the vital body of the patient at all, until they have left the alimentary canal and been absorbed into the circulation. When they have entered the circulation, they are carried by it to every part of the human body, to every single cell constituting our organism.

Selective Cell Action.—Innumerable substances are carried in this common circulation, to every cell of the body. Each of these cells absorbs from the circulation supplied to it such elements as it requires for its own needs, and these we usually term foods. But what is a food? It is that which that part of the body requires to restore it to that normal equilibrium which we term health. This need may be for a particle of oxygen, of lime, of iron, of fat, of any one of the innumerable substances supplied by our daily food. In the case of some of these, such as iron, lime, etc., we find it impossible to reply to the question as to whether these would be denominated foods or medicines. The closer we look for a dividing line, the more difficult it is to detect it.

Suppose we find that a group of cells in the body is defective in tonicity and we supply through the circulating fluid strychnine enough to restore their tonicity. Suppose, on the contrary, that another group of cells is possessed of an excessive tonicity, and is in a contracted or spastic condition, and we supply aconitine through the blood. The

spastic cell will take up a molecule of the drug, enough to remove the abnormal spasticity, and restore the physiologic balance.

To a certain extent, we believe, each cell of the body takes up what it needs and rejects what it does not need. Since there may be cells in the body which require the relaxant principle, and others which require tonicity, these two antagonistic remedies may be supplied in the same circulating fluid, and each cell will take up that which it wants, and reject that which it does not require.

We do not offer this as a demonstrated or demonstrable truth, but simply as a working hypothesis to explain certain clinical phenomena for which no other explanation has ever been vouchsafed.

But, we are asked, how do we account for poisoning? For it is evident that the remedial principle furnished to the blood may be taken up to such an extent as to occasion poisoning, with its symptoms. The difficulty, however, vanishes on closer inspection. Too much food may be taken up into the blood, and supplied to the tissues; too much water; too much salt; too much alkali; too much aconite. If the blood is surcharged to a certain extent with any principal food or medicine, the pressure from the blood upon the cells may be sufficient to compel the latter to imbibe more than they require, and then we have poisoning resultant.

In actual practice this difficulty is prevented by close observation on the part of the physician, whose duty it is, when any remedy is indicated in a case, to administer of that remedy just enough to secure normal equilibration, and not excess.

Our reasoning in this matter leads directly up to the point at which Virchow arrived, when he attributed to the cells of our body an independent conscious existence. In other words, he looked upon each cell as an independent volitional conscious being, the body being such an aggregation of these cells as might be represented by comparing it to an empire.

Intestinal Toxemia.—The more closely one studies the symptomatology of disease,

at the bedside, in the patient and not in the textbook, especially with the assistance of the modern scientific laboratory, the more deeply will he be impressed with the truth that an enormous percentage of disease as existing in the human being is directly or ultimately to be ascribed to the presence of toxic matters circulating in the blood. These toxic matters may be derived from the food we consume, from the decomposition of retained fecal matter in the alimentary canal, from the tissue-metabolism, or from outside sources, as from the inhalation of sewer- and other toxic-gases. To stop the inhibition of these substances and to rid the system of those already clogging it, circulating in the blood or stored in the cells of the various tissues, is the primary and one of the most important duties of the physician. In fact it is a fundamental law of therapeutics underlying the whole of our practice.

Three Fundamental Conceptions.—

These three conceptions underlie nearly the entire field of therapeutics: First, the incitation or the sedation of the various vital functions; second, combating invading parasites, directly or indirectly; third, elimination.

Other modes of drug-action are exceptional, and of infinitely less importance than they used to be considered.

Large and Small Doses.—Each new investigation of drug-action seems to bring out more prominently, and to extend to wider generality, the theory which attributes a direct antagonism to minute and to large or maximum doses of remedies. We may confidently assert now that this law is universal; and that the primary effect of minute doses of all remedies is stimulating, and that the effect of maximum or toxic doses is sedative. This has been brought prominently forward by a recent publication of Prof. T. J. Mays, who showed its applicability in many cases where it was not hitherto suspected; and has added the astonishing observation that the stimulating effect of minute doses may almost completely counteract the paralyzing effects of maximum doses. In this connection read carefully Dr. Mays' article in January CLINICAL

MEDICINE on the relation of the molecular weight and boiling point to toxicity.

PHYSIOTHERAPY

In our introductory chapter we gave a classification of physical therapeutic agents. We recognized four distinct divisions, to wit: physiological, physical, mechanical, physiochemical. Under the different heads we indicated briefly the characteristic features of each. Thus we stated that a physiologic therapeutic agent is "a force which is contained and constantly at work in the living animal body." It is, therefore, a part of that ever-active, health-preserving, damage-repairing, health-restoring machinery in the human organism whose collective function the older physicians designated as the *vis medicatrix naturæ*. Inasmuch as the knowledge thereof in its manifold aspects and relations to health (disease) is, to all intents and purposes, the understanding of physiology (pathology), the clinical application of these inherent therapeutic agencies has been referred to as "physiologic" therapy. In this accurately defined, exactly sense the term is proper. The impropriety in the use of this term came with the habit of including all nonmedicinal therapeutic agents under this head. In this wide and uncertain sense the term is a misnomer.

In arousing one of these latent forces in the human economy and directing its activity toward a certain end, it is oftentimes necessary to make use of auxiliaries that are extraneous to the body and in no way connected with the physiological machinery of the organism. To explain:

If we make an application of hot water to any part of the body, the effect would be an active hyperemia of the part. The increased arterial supply would be synonymous with better nutrition. Every functioning structure (e. g., the glands) would receive a larger share and a better quality of nutriment (i. e., fresh blood), and would as a necessary physiological result be better able and ready to perform its respective function. Thus the circulation would be more active, nutrition more perfect, metabolism more energetic, absorption and excretion more intense. All these effects are strictly physiological, but

they are dependent on and secondary to an extraneous physical agency, namely, an application of hot water.

The *heat* of the water is the therapeutic agent that is directly responsible for the physiologic effects produced. The water, as the carrier of the heat, is purely an accidental physical medium and bears no causal relation to the physiological effects of the heat. Here we have an illustration that aptly shows the essential characteristics of physiological and physical therapeutic agents and the differences between them. To understand these characteristics and to be able to differentiate between *physiological* and *physical* therapeutic agents is of the greatest importance. The example quoted above illustrates the dual (physiologic and physical) character of hydrotherapy. In order to learn the theory of physiologic therapy without burdening the mind with endless speculations, we will take up the study of hydrotherapy, the most generally useful of all the drugless therapeutic agents.

HYDROTHERAPY (THERAPY OF WATER)

The uses of water in medicine are known as hydrotherapeutic, or hydriatic, applications. Strictly speaking, they refer to the external as well as to the internal employment of water in any degree of aggregation (vapor, steam, water, ice). They include all degrees of temperature, from intense cold to intense heat. They comprise all modes of application (bathing of all kind, douches, uses of sheets, rubber bags, sponges, etc., etc.). The meaning of the term "hydrotherapy," however, has in recent times been much narrowed by usage. It refers usually to the external uses of water in any state of aggregation.

Hydrotherapy and Thermotherapy.

—Inasmuch as many of the effects produced by hydriatic applications are due to the degree of temperature carried by the water and since it is in many instances the effect of high temperature (any degree above 70°F.) that is involved in the therapeutic object to be accomplished, usage has sanctioned the synonymous use of the two terms "hydrotherapy" and "thermotherapy" in

the conditional sense suggested. Strictly speaking, there is no justification in this lack of accuracy of definition.

Hydrotherapy refers to the use of water, irrespective of the temperature.

Thermotherapy suggests the clinical uses of warmth or heat, irrespective of the medium or carrier of the temperature.

This medium is not necessarily water. It may be air, or, for that matter, any substance capable of retaining warmth as heat. Thus, in the strictly scientific application of the term, the uses of a dry-heat cylinder do not belong under the head of hydrotherapy, although not a few writers, for the sake of convenience, discuss the uses of dry heat under the caption of hydrotherapy. It would likewise be manifestly improper to speak of the use of a dry hot blanket or sheet or of a hot flaxseed poultice as a hydrotherapeutic application. The latter term is only proper when water is the carrier of the temperature.

Water only a Force Carrier.—Water, *per se*, in its external applications, has no therapeutic significance. Its effects are due to the activity of forces or agencies of which it happens to be the accidental and convenient carrier. The most important of these forces is, as has already been suggested, temperature of variable degree. Another force is the product of the bulk or weight represented by a given quantity of water and the action of such bulk or weight on the body or on any portion of the body-surface. The pressure of the weight of water on the skin acts mechanically and is analogous to other mechanical agents, e. g., massage. The effect of pressure on the vasomotor nerves of the surface and on the blood-pressure in the regions treated and even in the contiguous territory are in many instances equal in importance to any action which may be attributed to the temperature of the water.

Physiological Effects of Heat and Cold.—If we take a piece of ice and place it on any part of the body surface, certain characteristic effects are produced. The intense cold will cause a contraction of the part *en masse*. In this respect the tissues

of the body do not differ from other matter, organic or inorganic. Wood, metal, stone will contract if exposed to intense cold. If we remove the piece of ice from the part to which it has been applied, we can verify the contracting effect by the shrunken and blanched appearance of the part. In the living human body this effect, however, does not last. Within a few moments after the piece of ice has been removed, the part will begin to look full, the cuticle gradually assuming a rosy hue. The redness will show wherever the ice has been in contact with the skin. If the piece of ice has been triangular in shape, the area of redness will be an exact reproduction of this shape.

Why does the skin look red? What has taken place? The vasomotors of the skin, in response to the action of cold, have caused the arterioles within the domain of their control to contract. Thus arterial pressure is lowered in the region concerned, the quantity of blood is diminished, the heat of oxidation is reduced and a comparative stagnation in the metabolic activity of the region supervenes.

The ice having been removed, what happens? Action is followed by reaction, suboxidation by superoxidation. The depression of vasomotor control in the region treated gives way to a corresponding deviation in the opposite direction, an elevation or, to use a familiar and frequently misapplied term, a stimulation. The pendulum swings beyond the center. The arteries not only return to the normal capacity of their lumen, but get beyond it, they dilate and a corresponding increase in the amount of arterial blood takes place. The region treated will be more active in its metabolic, absorbent and excretory functions than under normal conditions. Eventually the condition of "stimulation" will pass off, the amounts of arterial blood will lessen and return to normal conditions of quantity and pressure.

Primary and Secondary Anemia.—

The example quoted contains the fundamental principles of hydrotherapy. First we have the anemia produced by the lay-

ing on of the ice. This condition hydrotherapists call primary anemia. This is eventually followed by great increase in the blood-supply, called hyperemia. That physiological phenomenon which is interposed between primary anemia and secondary hyperemia is the pivotal point upon which the practical effects of hydrotherapeutic applications hinge. It is the eternally necessary factor in hydrotherapeutic practice and is called reaction. Without this physiological impulse, which causes the vasomotor pendulum to swing beyond the center and forces the hyperemia to compensate for the anemia, the practice of hydrotherapy would be impossible. Let us remember this great fundamental fact for all time to come.

Primary and Secondary Hyperemia.

—When primary anemia supervenes, the actual quantity in the blood-mass of the region concerned is lessened. What becomes of the blood which is forced out of the part by the action of cold? It is, of course, taken up by the deeper contiguous tissues which in this way experience a coincident increase in their blood-supply—a hyperemia. This coincident increase in the amount of blood is called by hydrotherapists primary hyperemia. When secondary hyperemia in the cutaneous vessels has taken place, it is clear that the neighboring tissues or deeper structures lose a part of their blood-mass. Thus we have a secondary anemia established in these parts. These points are of the greatest practical import and should be thoroughly understood.

To recapitulate: Anemia in the primary area (i. e., the part where the primary contracting effect occurs) is coincident with hyperemia in the secondary area (i. e., the part where the surplus of blood from the primary area is received. Likewise there is a hyperemia in the primary area and coincidently anemia in the secondary area after reaction has taken place. All these phenomena are due to impressions made on the vasomotors.

The Sensory Response.—The sensory nerves also share in the physiological re-

sponse to the action of heat or cold. They communicate to the system at large distinct sensation of heat or cold within certain thermometric limits. Below a certain degree of cold or beyond a certain degree of heat no impressions of a definable character are received by the sensory nerves. The impressions are merely sensations of pain. It is only moderate degrees of high or low temperature that can be differentiated by the sensory nerves. The sensations of heat, of cold, as registered by the sensory nerves are suggestive of the tolerance of the animal body in that they indicate the thermometric limits within which animal life is possible. Degrees of intense heat or cold that cannot be differentiated by the sensory nerves and are simply received as sensations of pain are incompatible with the integrity of the animal body and are, therefore, distinctly destructive to whatever part they are applied.

Through the instrumentality of the sympathetic nervous system certain effects of a reflex character may be produced by the action of heat or cold applied to the body-surface or even only a part of it. Thus, for instance, a sudden application of cold will cause deep breathing by reflex stimulation of the respiratory centers. These reflex effects are numerous and variable and are of much importance in the practice of hydrotherapeutic methods.

SOME REMARKS BY "THE FACULTY"

We have been pleased with the large number who have signified their interest in the postgraduate course by enrolling as students; but while many have come in already, there should be a great many more. We therefore take this opportunity to extend an urgent invitation to everybody to enroll. Don't delay. Come in now. Get busy!

Not so many have sent in their answers to the examination questions as should. Possibly the time has been too short. However, while we want as many answers as we can get before the appearance of the succeeding lesson, let it be understood that it is permissible for every student to

take as much time as he needs to answer the questions and send them in. Only do it. We therefore hope that before this number reaches you we shall get replies for the questions from every man enrolled—and from the many more who will be enrolled before this reaches you.

There have been some questions and some objections which we shall try to answer from month to month in these columns, commencing with the following:

Number of Examination Questions.—

Several object to the number of questions, thinking there are too many. We do not know but they are right. Therefore, in this lesson we have reduced the total number of questions and we trust that as it now stands this examination will be a burden to no one. We want you to do the work, that is all.

Research Questions.—Some find these too difficult, mainly for lack of books to consult. Let it be first understood that the answering or failing to answer these questions does not affect the student's standing at all. The marks are made upon the examination questions proper, not upon the research questions. However, we hope that as many as possible will endeavor to answer the latter, because the answers, when published in the Journal, will supplement the defects in your library and, we hope, set you thinking. Some of them are a little technical in character, but out of them all one should glean a great deal which is of practical assistance. If there arises a question for which you have no means of securing the answer skip it and try to go on with the next.

EXAMINATION DIFFICULTIES

Comparatively few found real difficulties with the examination questions, and these only here and there—"in spots." Here are some of the questions as they were answered—good, too!

Name the Advantages and Disadvantages of the Metric System.—Dr.

H. K. Shoemaker, Flat Rock, Ohio, thus itemizes the advantages: "(1) A common unit; (2) simplicity; (3) decimal system;

(4) exactness." Dr. T. H. Line, Marquette, Nebraska, adds to this that "There is but one group of weights, which have a definite relationship to each other," and as its disadvantages he states that, "Being decimal it cannot be divided on the binomial plan (i. e., into halves, quarters, etc.) as other systems," and he also objects to its orthography and that it is not in common use in this country, thus leading to errors because of ignorance. This covers the case very well.

Prescriptions.—These were generally well and correctly written, the quantities being given with reasonable accuracy. A few stumbled on the metric quantities with which it is plain that very few are familiar. In this connection we give at the close of this lesson a criticism of one of these prescriptions, containing quinine and potassium iodide, by Dr. L. B. Evans of Baltimore. Let us have more such criticism.

The Laxative Pill.—Good formulæ were generally given, a wonderful variety, but very few gave any reasons for the proportions of the various ingredients which they used. One man gave as the best reasons for his proportions "that the combination worked." Good! But why? Is it all guesswork? We ought to know the *why* of these things. Who will undertake to work out this problem in a short article for this department.

Proportions in Prescriptions.—Those answering question No. 11 usually wrote good prescriptions but failed to observe the rule to which this question was intended to call attention. Read again the simple rule concerning the way to estimate amounts in prescriptions, as given on page 125. Go right back to it now.

Amide and Amine-Alkaloids.—Generally answered correctly, though some got mixed. Let us repeat.

Amides contain oxygen as well as carbon, hydrogen and nitrogen. They are solid and odorless. Examples of the amides are aconitine, strychnine, and morphine.

Amines contain no oxygen, and consist of carbon, hydrogen and nitrogen. They are fluid and volatile and have an ammonia-like

smell. Examples are sparteine, cicutine and nicotine.

Incompatibility.—Very little difficulty was shown, but most of those who responded did not go outside of the lesson for examples. Some have asked for a more complete table or list for reference, so we reprint the following:

CHEMICAL INCOMPATIBLES

Alkalis: Acids, alkaloids, ammonium salts, metallic salts.

Alkaloids: Tannin, iodides, bromides (generally) alkalis, mercuric chloride, gold chloride.

Acacia: Ferric chloride, lead acetate, alcohol.

Arsenous Acid: Tannin, ferric salts, magnesia.

Antipyrin: Ferric salts, nitrous ether, tannin, iodine.

Calomel: Alkalis, iodides, lime.

Chlorates: Mineral acids, calomel, tannin. In dry powder all organic substances and also sulphur and charcoal.

Chlorides: Salts of silver and lead.

Choral: Alkalis, calomel, strong alcohol.

Corrosive Sublimate: Alkalis, lime, iodides, bromides, alkaloids, albumen, gelatin, tannin.

Iodides: Mineral acids, alkaloids (generally), metallic salts. The bromides behave similarly.

Iodine: Alkaloids, metallic salts, volatile oils.

Iron Salts: Alkalis, tannin, iodides, bromides, acacia.

Pepsin: Alkalis, tannin, alcohol.

Pernganganates: All organic compounds, such as sugar, glycerin, gum, plant extracts.

Strychnine and Morphine: In solution with bromides deposits a strychnine bromide. *Note:* Powerful alkaloids *never* should be dispensed in solution with bromides or iodides.

Silver Nitrate: Chlorides, bromides, iodides, cyanides, alkalis, organic bodies.

Salicylic Acid and Salicylates: Iron compounds, iodides, alkaloids, acids liberate the acrid salicylic acid from salicylates.

Tannin: Alkaloids, alkalis, metallic salts, gelatin, albumen.

Advantages of the Alkaloids.—One of the best statements was as follows: "(1) Scientific; (2) portable; (3) efficient; (4) exact; (5) easy to administer; (6) promptly absorbed; (7) in search for cause of failure 'inert drug' is not to be considered; (8) unimpaired by age." This covers the ground pretty well.

Advantages and Disadvantages of Standardization.—Dr. R. S. Lynn, Kiefer, Oklahoma, enumerates them as follows: "Advantages: Exactness in the amount of the active principle wanted and a more scientific dosage. There would be no disadvantages over the old style of liquid

preparations, but many to the use of alkaloids, which are bulkiness, precipitations, evaporations, complexity of names of other active principles with their numerous actions and variations of different manufactures."

RESEARCH QUESTIONS

Glucosides and Resins.—A good description of the glucosides is given by Dr. T. H. Line, Marquette, Nebraska: "The term glucoside is applied to those organic principles which are readily resolvable into glucose and another organic principle, either by the action of mineral acids, of alkalis or of ferments. They are nearly all ternary compounds, that is, composed of hydrogen and oxygen, while one is quaternary, or nitrogenized, viz., amygdalin, and two are sulphureted, or complex, viz., sinalbin and sinigrin. They possess either neutral or acid properties and occasionally form salts or crystalline compounds; some few are soluble in water, but the greater number are insoluble in water, therefore making them mostly pharmaceutically incompatible in watery solutions. They are readily soluble in alcohol. The organic acid formed in many of them makes them chemically incompatible with alkalis or alkaline substances."

Here is what Dr. E. S. Jones of Marseilles, Ohio, says of resins: "Resins are not definite in composition. They are obtained by precipitating the resinous principles of plants from their alcoholic solutions by the agency of water. They are soluble in alkalis and volatile oils." From this we can deduce that the resins are incompatible with aqueous mixtures, and that they may be prescribed in the form of alkaline solutions or emulsions. Of course the best way to prescribe glucosides and resins is in granule form.

Galen.—A good brief description is that of Dr. H. G. Palmer, of Detroit, Michigan: "Claudius Galen, a Greek physician, born A. D., 131, began studying at 17 years of age, gathering all the medical knowledge of his time and putting it in such a foundation of truth that it was an authority for cen-

turies. He excelled particularly in anatomy. He died A. D. 201." It is interesting to know that this eminent Greek physician, who studied his profession in Pergamos, Smyrna, Corinth and Alexandria, went to Rome in his thirty-fourth year and became the physician of Marcus Aurelius, the emperor and philosopher. As Dr. Palmer says, for centuries he was the universally accepted "authority" in medicine. He was energetically polypharmaceutical; naturally the complex official remedies to this day are called "galenical."

The First Pharmacopeia.—Dr. E. S. Jones of Marseilles, Ohio, says that "the first pharmacopeia published under authority was that of Nuremberg in 1542. The first British Pharmacopeia appeared in 1618. The first U. S. Pharmacopeia appeared in 1820. It is revised every ten years." The revising body is elected by a Pharmacopeial convention, consisting of delegates sent from various medical and pharmaceutical colleges and societies, and by the Army, Navy and Public Health and Marine Hospital Services of the Government.

National Formulary Preparations.—The following are some of the National Formulary preparations, with the things which different students think they are imitations of:

NATIONAL FORMULARY	PROPRIETARY PREPARATIONS
Mistura Carminativa	Dalby's Carminative
Syrupus Hypophosphitum Compositum	Fellow's Syrup of Hypophosphites
Vinum Carnis et Ferri	Liebig's Beef, Iron and Wine
Elixir Viburn. Opul. Comp.	Hayden's Viburnum Comp.
Liquor Antisepticus	Listerine
Liquor Auri et Arsenii Bromidii	Arsenauro
Liquor Acidi Phosphorici Comp.	Horsford's Acid Phosphate
Syrupus Sennæ Aromaticus	Castoria
Syrupus Pectoralis	Jackson's Cough Syrup
Tinctura Antiperiodica	Warburg's Tincture
Liquor Iodi Causticus	Churchill's Iodine Caustic
Elixir Peppini	Lactopeptine
Elixir Bromidii Comp.	Bromidia

This list might be continued almost indefinitely. The old "patents" and the most popular of the modern proprietaries nearly all have their imitations in the National Formulary, which are now accepted and urged upon the medical profession as "semiofficial."

Alkaloids Soluble in Water.—Of the solid, or amide, alkaloids, which are sufficiently soluble in water for practical thera-

peutic use we know of only two, codeine which is soluble in 120 parts of water, and caffeine which is soluble in about 80 parts of water. Nearly all the alkaloids are given in the form of their salts, as sulphates, hydrochlorides, hydrobromides; their solutions are usually very readily soluble in water and slightly soluble in alcohol. The amine alkaloids, however, which are liquids, are many of them water-soluble. The best-known of these, perhaps, from a therapeutic standpoint, are cicutine and sparteine. Sparteine is very readily soluble in water but the cicutine does not seem to be. However, these are rarely given in solution. The pill or granule form is to be preferred.

Who Discovered the Alkaloids?—

This is a question that caused a good deal of difficulty, probably because most of the textbooks do not supply the information. And yet it is something which we should all know. Certainly we should honor the great men who are doing the original work of the world.

Friedrich Wilhelm Adam Sertuerner, apothecary at Einbeck and Hameln, discovered morphine in 1805 and published his discovery in 1817, in Gilbert's *Annalen der Physik*. In 1818 Pelletier and Caventon discovered strychnine and in 1820 quinine; while in 1833 Geiger and Hesse discovered atropine. Many have been demonstrated since those days, and even now more are constantly being demonstrated in different plants.

What are Esters?—A good definition is given by Dr. Ralph Browning of Myersville, Maryland: "Esters are analogous to the salts of the metals. If CH_3COOH (acetic acid) be acted upon so that the H is replaced by the radical, C_2H_5 , the resulting combination will be $\text{CH}_3\text{COOC}_2\text{H}_5$ —'ethyl acetic ester.' These were formerly called ethereal salts."

Sajous's Theory.—Nearly everybody fell down on this, showing that the conception that most physicians have of this theory is of the faintest. Next month there will be an article on this subject that will give a well-digested outline. Read it carefully. This theory will have to be given consid-

eration in the next few years, and as giving a basis for a therapy it promises much.

Sizes of Spoons.—Great variance was found in the sizes of spoons. One physician found that his teaspoons varied from 5 Cc (15 minims) to 8 Cc (2 drams) in capacity; his dessertspoons 12 and 13 Cc (3 to 3 1-4 drams); his tablespoons average 17 Cc. Another found his teaspoons averaged 75 minims, his tablespoons four drams and 40 minims. Another's teaspoons ran 45, 47, 50, 52, 58, 59, 60, minims; his dessertspoons 60, 65, 75, 72 and 80 minims; tablespoons 120, 125, 135 minims. These are fairly representative of the whole number, showing the wide difference in capacity of these ordinary domestic measures and the inexactness of therapeutic means which must follow their use.

Graduates.—All pronounce the cylindrical graduate the most accurate.

Drops from Different Vials.—The following is given by one of the students; the amounts given are the quantities represented by 100 drops.

"Thick lip, cork stopper.—Tinct. phyto-lacca, 4.5 Cc; fl. ext. cascara, 5 Cc; glycerin, 5.5 Cc; ether, 3.5 Cc; chloranodyne, 4.5 Cc. Pocket vial case.—Tinct. phytolacca, 4.5 Cc; fl. ext. cascara, 4.5 Cc; glycerin, 5.5 Cc; ether, 3 Cc; chloranodyne, 4 Cc. Medicine dropper.—Tinct. phytolacca, 2 Cc; fl. ext. cascara, 2 Cc; glycerin, 3 Cc; ether, 2 Cc; chloranodyne, 2 Cc."

This shows that the use of a medicine dropper is the only really accurate method of dropping medicine.

Different Electrical Currents.—This is nicely shown in the diagram given by Dr. Ralph Browning whose paper is one of the few to get the 100-percent grade. We cannot reproduce the drawing here but will give his ideas the best we can, as below:

Static—Electrotonic.

Galvanic—Electrotonic, electrolytic, kataphoretic.

Faradic—Electrotonic.

The doctor thinks the faradic current is also kataphoretic, but most authorities do not agree with him.

A COMMENT ON A PRESCRIPTION INCOMPATIBILITY

In the Post-Graduate Course, page 134, of the January number of *CLINICAL MEDICINE* the following prescription is given, with the request to write the objections to it:

Quininæ sulphatis.....grs. 30
Potassii iodidi.....drs. 2
Syrupi sarsaparillæ.....ozs. 8

The writer is evidently under the impression that this is a chemical incompatibility. But there is no precipitate formed when the two salts are mixed together in solution, and the solution remains clear if you add Fowler's solution; but a milky white precipitate is thrown down when Donovan's solution is added. There is no precipitate with ammonium iodide.

There are numerous examples in the literature of potassium iodide being combined with galenicals containing alkaloids without any precipitate being formed. Elkourie (*J. A. M. A.*, July 30, 1904, p. 350) recommends the following for chronic rheumatism.

Potassii iodidi.....dr. 1
Sodii salicylatis.....drs. 2
Colchicinæ.....gr. 1-2
Strychninæ sulphatis....gr. 1-2

M. ft. capsulæ No. 30. Sig.: One three times a day after meals. Caillé recommends the following expectorant mixture:

Potassii iodidi.....drs. 2
Tincturæ opii camph....drs. 2
Liq. ammonii anisati....dr. 1-2
Syrupi tulotani.....drs. 2 -
Aquæozs. 4

M. Sig.: One-half teaspoonful to a tablespoonful three or four times a day.

M. Sig.: A teaspoonful with sugar every two hours. Potter recommends the following for aneurism:

Potassii iodidi.....dr. 1
Tincturæ veratri viridis...dr. 1-2
Tinct. cinchonæ comp. ..oz. 1

Ballenger (*J. A. M. A.*, Apr. 13, 1907, p. 1295) recommends the following mixture for local use:

Iodoformigr. 1
Potassii iodidigrs. 10 to 20
Morphinæ sulphatis.....gr. 1
Glycerinioz. 1

M. Sig.: Apply to the pharynx with a swab once daily.

[Dr. Evans gave other formulas which are omitted for lack of space.—ED.]

It seems to me that *The Journal of the American Medical Association* (July 13, 1907, p. 184) is in error about the precipitate spoken of in the following quotation, as being the periodide of quinine, which, as a matter of fact, is a yellowish, and not a "nearly black" precipitate, as there stated:

"When perchloride of iron is combined with potassium iodide such a mixture develops free iodine, the iron being reduced to the ferrous state. The amount of iodine that may be liberated is liable to be dangerous. *The Pharmaceutical Journal* calls attention to the following prescription in which this reaction is complicated by a secondary one:

Ferri et quininæ citratis....drs. 2
Potassii iodidi.....drs. 3
Syrupidrs. 4
Aquæ, q. s. ad.....ozs. 4

"The amount of acid in the solution of the double citrate is small and iodine is slowly liberated. Iodine in potassium iodide solution is a general precipitant of alkaloids and a nearly black precipitate of periodide of quinine will be produced. Addition of enough alkali to neutralize the solution of the scale-salt before adding to the iodide will delay the reaction considerably."

The "nearly" black precipitate which occurs here is evidently that of the protiodide of iron, which is grayish black in color, and is not the periodide of quinine at all. In conclusion, I have to say that I have failed to recognize any incompatibility between potassium iodide and the alkaloidal sulphates of quinine, morphine, strychnine, and atropine. In view of the data supplied by the galenical formulas which I have quoted I believe the asserted incompatibilities between potassium iodide and the alkaloids to be a myth which can be safely and advantageously ignored. L. B. EVANS.

Baltimore, Md.

[This is an intelligent and welcome criticism. However, Caspari (who is a high

authority), in his "Treatise on Pharmacy," says:

"The salts of the alkaloids are decomposed by certain salts of the alkalis, with the production of insoluble or sparingly soluble compounds, therefore such combinations require the special attention of pharmacists in order to guard against accidents. As a rule, the alkali carbonates, iodides and bromides are incompatible with alkaloidal salts, while the sulphates, nitrates and chlorides appear to cause no trouble; hence in the case of the first-named salts the directions to shake the mixture should always be put on the bottle. The presence of a certain amount of alcohol in the liquid will prevent the precipitation of the newly formed alkaloidal salt, as may be demonstrated in the following prescription:

Strychninæ sulphatis.....gr. 1

Potassii bromidi.....oz. 1

Aquæ destillatæ, q. s., ad.....ozs. 4

"If the solution be prepared as written, strychnine bromide will gradually be deposited in colorless crystals, and may cause serious results should the same be retained in the bottle and a large quantity be taken with the last dose or two. If, however, equal volumes of aromatic elixir and water be used in place of water alone, no separation of strychnine bromide will occur. At least 12 percent of alcohol must be present in the solution to prevent precipitation.

"In a few rare cases, when a sufficient quantity of solvent is present to take up the alkaloid in its pure state, it may be preferable to use the latter in place of its salt, as, for instance, in the following prescription:

Codeinæ sulphatis.....grs. 8

Potassii bromidi.....oz. 1

Aquæ destillatæ, q. s. ut ft.....ozs. 4

"It was found that if the codeine sulphate was used, as prescribed, a precipitate invariably formed, which was with difficulty uniformly suspended by agitation, but by using the pure alkaloid codeine in place of the salt a permanently clear solution was obtained. Morphine sulphate is sometimes prescribed in conjunction with sodium bicarbonate, the result being a minutely

crystalline precipitate. Quinine sulphate and potassium acetate should not be associated in solution, on account of the slight solubility of the quinine acetate, which is formed as a very bulky precipitate, and may cause solidification of the mixture."

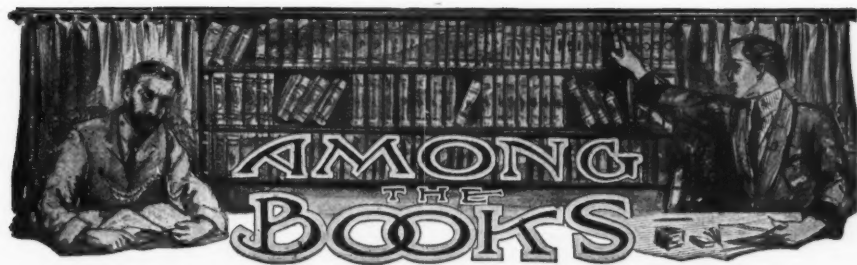
We think that we have given "authority" enough to show the danger of using this combination. That the alkaloid is not *always* precipitated does not militate against the general warning. The very difficulty of *being certain* that your prescription is a safe one is an argument in favor of using the powerful alkaloids in granule form.—Ed.

EXAMINATION QUESTIONS

1. What are counterirritants and how do they affect (a) the circulation and (b) the nervous system?
2. What are the indications for caustics, vesicants, pustulants? What are the contraindications for the same?
3. What is the difference between an emollient and a demulcent?
4. Describe what you think the best method for preparing and applying a linseed-meal poultice.
5. What is the difference between an ointment and a paste? What is the best vehicle when an ointment is to be applied to the scalp? When it is to be used as a protective? When it is to carry medicaments for absorption?
6. What kind of vehicle could be used to get a prolonged protective or medicinal action upon the skin?
7. What three fundamental conceptions underlie therapeutics?
8. What is meant by stimulation and sedation? What vital processes are affected and how?
9. Enumerate the ways by which germ action may be combated by remedial means.
10. State the theory of selective cell-action.
11. How may intestinal toxemia cause, intensify and prolong disease?
12. State the advantages of the small repeated dose.
13. What is hydrotherapy? Is it a physiological or a physical method?
14. What are primary anemia and secondary anemia? Primary hyperemia and secondary hyperemia? Reaction?
15. Describe the physiological action of cold.

RESEARCH QUESTIONS

1. Describe in detail the form of counterirritation that you find most generally effective.
2. What local application in your experience is best for relieving the pain of neuralgia, rheumatism, pleurisy.
3. Give accurate formulas for Lassar's paste. Unna's paste. Lead plaster.
4. What is Mays' theory concerning the action of antiseptics and antipyretics? (See CLINICAL MEDICINE, Jan. 1908, page 42.)
5. What is meant by the *vis medicatrix naturæ*? Write a historical sketch.



WOOD AND WOODRUFFS'S "COMMONER DISEASES OF THE EYE"

The Commoner Diseases of the Eye; How to Detect and How to Treat Them; For students of Medicine. With 280 illustrations (many original) and eight colored plates. By Casey A. Wood, M. D., C. M., D. C. L., of Northwestern University, and Thomas A. Woodruff, M. D., C. M., L. R., C. P. (London) of St. Luke's Hospital, Chicago. Third edition enlarged and improved, with index. Chicago, W. T. Keener & Co. 1907. \$2.50.

This always excellent book has changed publishers, with the present improved and enlarged edition. We repeat here what we said of the book in 1904, page 536. It is "the most practical book on the eye for the general practitioner." It is useful as a reference book and it is a book which should be read carefully, in its entirety, and its contents digested by every general practitioner. It deals with subjects with which all should be familiar. Among its many good features is its excellent cross-reference index; the reviewer's conscience is free to say, the very best for this excellent book.

OTT'S "TEXTBOOK OF PHYSIOLOGY"

Textbook of Physiology. By Isaac Ott, A. M., M. D., of the Medico-Chirurgical College of Philadelphia. Second edition. Illustrated with 393 half-tone engravings, many in colors. Royal octavo; 815 pages. \$3.50 net. F. A. Davis Co., Philadelphia.

This second edition is enlarged by the addition of 240 pages, which allowed the author to bring up his description of the

science to the present stage, which it has acquired since the first edition. It still preserves the pleasing style of a gladly heard lecture.

GLEASON'S "DISEASES OF THE EAR, NOSE AND THROAT"

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M. D., LL. D. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907. Price, \$2.50.

In my youth of long ago I studied the subjects of this book under the special instructions of the ever-to-be-remembered Dr. Cornelius Agnew of America, and under Storck and Politzer in Vienna, Austria. In those days I thought we were advanced in instruments and operations. In this country, also, I practised not a little these subjects and read their latest literature. Therefore I think I can judge how far we have advanced in this country and can judge of the value of a book on these subjects when examining it. Hence the pleasure it gives me of saying that I esteem Dr. Gleason's book as the most recommendable to student and general practitioner.

BISHOP'S "HEART DISEASES AND BLOOD PRESSURE"

Heart Diseases and Blood Pressure. A practical consideration of theory and treatment. By L. F. Bishop, A. M., M. D. Second edition. New York. 1907. E. B. Treat & Co. Price, \$1.00.

In our review of the first edition we compared its greater usefulness for the general practitioner with the more extensive and

theoretical work of Dr. Theodore C. Jane-way on "The Clinical Study of Blood Pressure," published by D. Appleton & Co., in 1906, and we hailed Dr. Bishop's smaller book as very useful for immediate consultation. It is gratifying to the reviewer to see his appreciation shared by others in the profession, so that a second somewhat enlarged edition is called for. We venture to predict that this edition will not be the last.

BARTLEY'S "PHYSIOLOGIC AND CLINICAL CHEMISTRY"

A Manual of Physiologic and Clinical Chemistry. Third edition, revised and enlarged. By Elias H. Bartley, B. S., M. D., Ph. G., of the Long Island College Hospital. Fully illustrated. Philadelphia: P. Blakiston's Son & Co. 1907. Price, \$1.00.

It is the aim of the author to teach how to find out what there is to be known of the urine, the gastric contents, the blood, the feces, and the milk in health, and the significance of their alteration in sickness, as regards pathology and treatment.

MERCK'S INDEX (1907)

This is the third English edition of this valuable book, which is a veritable encyclopedia for the chemist, pharmacist and physician, stating names and synonyms, source or origin, chemical nature and formulas, physical form, appearance and properties, melting and boiling points, solubilities, specific gravities and methods of testing, physiologic effects, therapy, administration, doses, incompatibilities, antidotes, special cautions, hints on keeping and handling, etc., of the chemicals and drugs used in chemistry, medicine and the arts. Publishers, Merck & Company, New York, 15 University Place.

The house of Merck & Company dates from a period when science was pursued for its own sake, not for that of the almighty dollar, when the craving mind asked, "Who will show us any good?" and not "What is it good for?" And so Merck acquired

the habit of thoroughness, and with this confidence and reliability came of themselves, from all the world to Merck. Those who have imitated and are imitating this example in our own day will have harder work, but they, too, if they persevere in this noble end, will reap their reward if they faint not and fail not.

Merck's Index, second edition in the German language, was issued at the end of July, 1902, and has been with us ever since for correcting his English Index, second edition, of 1896. The present English work is of course preferable to the last German one, which is five years older, but there are features in the German second Index to which we shall always remain attached. There is no price given for the work, perhaps because it is priceless.

ALBRIGHT'S "BUSINESS METHODS OF SPECIALISTS"

Business Methods of Specialists, or How the Advertising Doctor Succeeds. An exposition of the inside working of the complicated structure the advertising specialist has built about himself, the doors of which are seldom peon to the professional investigator. By Jacob Dissinger Albright, M. D. Published by the author, 3228 N. Broad St., Philadelphia, 1907. Price \$1.25.

The reader will get here for the price a book of 110 pages of about seven by five inches, but let him take our word for it that all of it is racy, readable and rewarding reading matter, such as only Albright can write. It is well worth the price charged for it.

GOLDSBURY'S "REGISTER OF FOODS"

This is a graphic study of eatables by the comparison of the percentages, full value per pound given in figures from the latest (1907) official sources of their principal chemical elements. It is designed for students of dietetics. Copyright by P. W. Goldsbury, M. D., Boston, Mass. Whitcomb and Barrows, publishers. Boston. Price not given.

We have nothing to add to the full title, except that it gives quantities in our familiar pounds instead of grams. It is bound in a very good card-board of 19 by 13 inches printed in four different colors. It is the most convenient table we have had the pleasure of seeing and using.

BLAKISTON'S "VISITING LIST"

The Physician's Visiting List for 1908, for 25 patients. Fifty-seventh year of its publication. Dose-table revised by the U. S. Pharmacopeia of 1905. Table of uterogestation time. Calendars for 1908 and 1909. Notes on chemical, pharmaceutical and therapeutic incompatibilities. Immediate treatment of poisoning. Tables of weights and measures, metric and apothecary and convertibles. Published by P. Blakiston's Son & Co. Philadelphia. \$1.00. The shape, flexible binding, tuck and pencil have ever recommended themselves to the busy physician.

PIERSOL'S "HUMAN ANATOMY"

Including Structure and Development and Practical Considerations. Edited by Dr. A. Piersol of the University of Pennsylvania, with the aid of other active physicians and teachers of anatomy. Published by J. B. Lippincott Company, Philadelphia and London. 1907. Price \$7.00.

There are two ways of studying anatomy, one is for its own sake, as a science to be delighted in and edified thereby, and another is for its indispensable and constant application to the practice of medicine and surgery.

We are glad to notice, and in the name of the seniors though not the seniles of the profession, to express our thanks to the editor for not carrying the zeal of the Basel nomenclatural reform to the extent of killing the old and more familiar nomenclature by a suppressing deadly utter silence. This feature, too, of the book is in accord with its constant endeavor to be of practical use to the physician. We do not mean to be invidious in saying that for a book on the

physician's study table, to be often referred to in the study of cases under treatment, there will rarely be found another work to either surpass or equal it.

BRICKNER AND MOSCHOWITZ'S "SURGICAL SUGGESTIONS"

Five Hundred Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, B. S., M. D., and Eli Moschowitz, A. B., M. D. Second series. Surgery Publishing Company, New York. 1907.

This is an amplification of the little book with a similar title, published in 1906. The first issue of "Surgical Suggestions," so we are informed, was exhausted in a few months—hence this second series, which contains all that was in the first edition and much more. Those who have from time to time read the practical "suggestions" that have appeared in *The American Journal of Surgery* will welcome another edition of this beautiful little book, which is well filled with the most concentrated and most helpful surgical items, just such as the average man will be likely to find most helpful. The price is a dollar, and while the book is small, it is worth the price.

DELAFIELD AND PRUDDEN'S "PATHOLOGY"

A Textbook of Pathology, with an Introductory Section on Postmortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Drs. F. Delafield and T. M. Prudden of the College of Physicians and Surgeons, Columbia University, New York. Eighth edition, with thirteen full-page plates and six hundred and fifty illustrations in the text in black and colors. New York: William Wood & Co. 1907. Price \$6.50.

Disease is not an entity, and neither is health nor ease. And if the discourse of our every-time attained progress in the science or knowledge of health or ease is rightly termed physiology, so is the discourse of our every-time attained progress in the science

or knowledge of unhealth or disease rightly termed pathology, suffering nature. And the every-time living physician must be acquainted with both. Even if the physician is unfortunately an unbeliever in drug therapeutics, he cannot conscientiously attend a patient without a knowledge of physiology and pathology to the degree it may be found present. That in neither of these branches is the ultimate yet reached is no excuse for their neglect, for the educated physician must be acquainted with the points in these branches that are yet *sub judice*, and they are many.

The book before us is in all these respects most excellent. Pathology and physiology are always brought in view of each other, and the points that are *sub judice* yet are stated as such. Altogether, we shall be found to be correct in giving the book the highest mete of praise, for a pathology fully up to date in the scientific attainment of the discipline.

CARVAJAL'S "TOBACCO AND TOBACCO HABIT"

Tabaco, Tabacomania, Tabaquism. Revista compendiada. Mexico, D. F. Dr. E. Lavalle Carvajal. De venta en casa del autor, Rosales 14. \$2.00 el ejemplar.

This is a very valuable treatise on tobacco, tabacomania, and tobaccoism. The book is not the product of an antitobacco extremist, asserting everything he has to say under the ridiculous grand eloquence of an "I tell you," but the honest scientific result of a world-wide research in the investigations of renowned scientific men.

It is written in an easily elegant Spanish and treats on the following subjects: Botany, history, composition; pure tobacco and Mexican cigarettes; injurious effects of components, utility and uselessness, use and abuse; acute and chronic intoxication; local irritation, smoker's cancer, buccal leucoplakia; tobacco, syphilis and cancer; the digestive, respiratory and circulatory apparatus; tobacco heart, palpitation, angina pectoris; the nervous system, tobacco neurasthenia;

ophthalmic tobaccoism; genital functions; the organs of sensation; tobacco industry; prognosis, treatment, prophylaxis; conclusions.

The intelligent medical defender or prohibitor of the moderate use of tobacco will find in this book valuable material for support or correction. There ought to be a call for an English translation.

CARUS'S "CHINESE LIFE" AND "CHINESE THOUGHT"

Chinese Life and Customs. By Paul Carus, Chicago. The Open Court Publishing Company. 1907. Price \$0.75

Chinese Thought. An exposition of the main characteristic features of the Chinese world-conception. By Paul Carus, Chicago. The Open Court Publishing Co. 1907. Price \$1.00.

These two books are profusely illustrated and give an amount of information, both textual and pictorial, of unusual reliability. They are written by an author whose wonderful familiarity with this subject and whose scientific and ethical culture insure such an honesty of presentation that it is a delight to recommend them to the general reader.

HENRY PHIPP'S INSTITUTE

Third Annual Report of this, one of the noblest scientific benevolent, institutions for the study, treatment and prevention of tuberculosis. February, 1904.

You can get it by writing to Dr. Joseph Walsh, 238 Pine St., Philadelphia, and your library will then have the best book on the great medical question of the age.

MICHIGAN STATE BOARD OF HEALTH

Thirty-fourth Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the fiscal year ending June 30, 1906.

We thankfully acknowledge the receipt of the above, December, 1907.



PLEASE NOTE

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report the results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

ANSWERS TO QUERIES

ANSWER TO QUERY 5255.—“Atropine and Dilated Pupils,” by F. M. L., Arkansas. I wish to say that all medicines, if they have any action, have a specific action on diseased conditions. And the all-important thing is for the doctor to study the action of his remedies according to the conditions that obtain and forget the conditions of the disease.

Now, belladonna (or its active principle atropine): The specific indications for belladonna are dull face, dilated pupils, dulness of mind, tendency to sleep, impaired capillary circulation, cold extremities in congestion of the brain and spinal cord, met with in scarlet-fever and in whooping-cough and in some throat troubles. In these conditions belladonna is a specific and is curative, no matter what the name of the disease your patient is suffering from.

Take the opposite condition: Flushed face, bright eyes and contracted pupils, increased heat of head and general headache, hot extremities and surface of the body. Determination of blood to the brain: the opposite condition from what the doctor describes. In this condition gelsemium is a specific, will give immediate relief and is curative, and will surprise the doctor as did the atropine.

If the doctor wishes to know more of the action of remedies along this line, and will send and get Scudder's “Specific Medication”, he will be surprised and delighted, and in the use of the alkaloidal remedies will be surprised at his success and the small amount of the medicine required.

“Specific Medication” can be had by sending to John K. Scudder, 1009 Plum St., Cincinnati, Ohio. Price \$2.00.

GEO. D. COE.

San Francisco, Calif.

—
ANSWER TO QUERY 5325.—You can cure rhus toxicodendron poisoning, relieve the excessive itching and burning, by using Lloyd's specific tincture of echinacea angustifolia and hot sterilized water, equal parts; to cure a bad case, say 8 ounces each. Cleanse the surface well first with carbenzol soap and soft hot water, mop with a soft cloth after bathing well with this soap and water, and while the skin is slightly moist apply this solution (echinacea and water), wrap the parts affected in the best quality of absorbent cotton and keep damp with this solution.

At the same time take enough magnesium sulphate to wash out the entire length of the digestive tract and keep the bowels open and clean, and within forty-eight hours your rhus toxicodendron poisoning will have disappeared and your patient will thank you a thousand times and send you other patients. My Dear Sir, cure all cases of insect-bites, bee-stings, urticaria and similar troubles with the same remedy, applied the same way, and you will be surprised at the pleasing results.

Give echinacea angustifolia internally, from 3 to 30 drops, in all cases of fever anywhere and under all circumstances, with coated tongue (any kind of a coat), with bad odor from the breath, bad taste in the

mouth, in any case in which you find an offensive smell coming from within. Cure your snake-bites with it in 15- to 30-drop doses every half hour, and apply locally a 50-percent solution to bitten surfaces. Apply freely; it will cure. All these cases should be cleaned out and kept clean with saline laxative.

[This inquirer (5325) asks the question, "What is rhus toxicodendron used for?" Now that's funny. Why, I have used this remedy internally for forty years, and it seldom fails when my diagnosis is correct. It is useful in cases of supraorbital pain, when there is strawberry-tongue, burning pain, a stinging sensation, in all fevers and in inflammatory diseases showing the above symptoms. In itching, burning exanthemata and in erysipelas give specific tincture of rhus toxicodendron (five to eight drops in four ounces water), one teaspoonful every one or two hours. Echinacea should be

used externally and internally with rhus toxicodendron.

Get a copy of Scudder's "Specific Diagnosis" and "Specific Medication" (two books) and "catch on." Keep up with the advance of medical science. Get into the band wagon! Don't open your eyes and exclaim, "Eclectic!" Get out of the old ruts, lay aside prejudice, and invest \$5.00 in these two books (less 10 percent if bought from John K. Scudder, M. D., of Cincinnati), peruse them with the intention of learning something more than you ever knew before. It will do you good. In the language of the poet,

Seize upon truth wherever found,
On Heathen or on Christian ground,
Among our friends, among our foes,
The fruit divine where'er it grows.

I am not working for Lloyd or Scudder, either.

J. E. CALLAWAY.

Chillicothe, Mo.

QUERIES

QUERY 5259. — "Effect of Morphine Thrown into Vessel." B. B. W. of Texas writes: "On page 1269 of the October CLINIC Dr. W. F. Nelson reports a case of 'morphine idiosyncrasy,' and I have just been thinking what a nice chance it was for you to explain vasomotor dilation or constriction. Don't you believe he threw the morphine, a constrictor, into a blood-vessel and it was so quickly picked up and carried to the heart or cardiac center that it produced palpitation or constriction of the blood-vessel and consequent palpitation? Now, I have done this same thing, in patients and immediately followed with atropine, and the untoward symptom was relieved in one minute. And another thing, I never have had it happen with morphine when combined with atropine. Now, it can't be an idiosyncrasy, as it has happened with me in patients in whom I have used morphine before and after with no such effect. I think I have had it in four different patients, and always relieved it by a vasodilator at once. There is no question but

that the face and lips are even "stiff" after the one- to five-minutes' excessive hard and fast beating of the heart."

It seemed strange to us at the time that Dr. Nelson failed to grasp the significance of the symptoms which presented after the injection of morphine. There is no question but that he threw the morphine into a vessel. Tingling, burning and rapid heart action invariably follow the injection of a solution of morphine into a blood-vessel of any size, and we have seen a patient suffer severely; every particle of the body from head to feet seemed to be on fire and tingling intensely. Throbbing occurs in the temporal region, the eyes become congested and the heart-rate increases extraordinarily. A splitting headache may last for hours. If morphine is thrown into a nerve-trunk almost instant numbness of the area supplied by the nerve ensues. A man should be quite sure that he does not inject morphine solution into a vessel and an experienced practitioner will rarely do it. No "idiosyncrasy" about it, Doctor. We

felt like calling Dr. Nelson's attention to these facts, but upon second thought remembered they are known to almost every physician. Atropine might relieve symptoms, but its addition to a solution of morphine would not prevent their occurrence if fluid were thrown into a vessel.

QUERY 5260.—“The Right Remedy Improperly Used.” W. P. H., of Georgia, reports his experience with calx iodata in the treatment of a case of membranous croup as follows: “About ten years ago I began to read the fine results with this remedy in the treatment of membranous croup. I secured a supply of the drug and commenced its use at once, and up to the present time I thought we had an infallible remedy for this dreaded disease, but my confidence has been shaken. I was recently called to a little fellow, aged two years, with all the distressing symptoms of membranous croup, every symptom being present. No question of diphtheria in the case.

“I commenced giving three tablets of calx iodata dissolved in a spoonful of hot water every hour until symptoms were relieved. I also gave gr. 1-4 of calomel every half hour until one grain was taken, stating to the family that the child would undoubtedly be better within a few hours. I left promising to call late in the evening of the same day. To my astonishment on making my evening call I found the patient not improved but instead all symptoms worse. I had used this treatment in so many cases in years past with never a failure before. I began to think, surely my medicine had not been given as directed, but on close questioning and more mature thought I decided this could not be true, but, anyway, I decided to remain all night and see that the medicine was given under my own eyes.

“I immediately commenced giving five of the calx iodata tablets every hour and continued this dose for sixteen hours, the patient growing worse all the time until he expired at nine p. m. the following night, never getting any relief except one

time about midnight, when I gave him a hypodermic of apomorphine, which induced vomiting and relaxation and a few moments of easy breathing and quiet sleep. Now, had I known that my remedy was going to fail me I would have resorted to tracheotomy before it was too late, and that is my reason for reporting this case. Do not put too much confidence in any one remedy, for it may succeed in ninety-nine cases and then fail you on the one-hundredth. You may publish this if you think it worth while, otherwise drop it in the waste-basket; but I think we should publish some of our failures as well as our successes.”

You are correct, we learn more from our failures and there is a valuable lesson here. First and foremost, Doctor, let us here impress upon you the fact (with which you are of course familiar) that *no remedy is to be regarded as infallible*, and in every case we must *meet the conditions present*, with the right therapeutic agents. Now, it appears to us that in this instance steam inhalations, cold compresses, the *earlier* use of emetics, cactin (or other heart tonic) and lobelin were indicated. We may in ten cases of croup find calx iodata all-sufficient, but, in the eleventh case we must “recognize the peculiar conditions” and give the *right* remedies therefor to effect. Moreover, once in awhile tracheotomy or intubation becomes imperatively necessary, and as we have pointed out time and again in our literature, the practitioner must be ready to do either operation at any time. In this case you say you “stayed all night,” giving, quite late, a dose of apomorphine. That dose (with other indicated remedies) given earlier might have obviated intubation or tracheotomy *but*—if the need for either occurred, it should have been done. We are just writing you as we would talk alone together and we know that you know all this as well as we do. Calx iodata is our *best* remedy in membranous croup, but its power has a limit and the doctor using it must still be “the doctor” and use his knowledge of pathology and materia medica when need arises. May we urge you here to obtain Dr. Candler's new book, “The

Every-day Diseases of Children"? It will help you out of many a tight place—and we all get into them now and then.

QUERY 5261.—“Mitral Stenosis and Some Remarkable Medication.” M., of Ohio, reports the following instructive case: “A woman, 66 years old, has mitral stenosis with moderate arteriosclerosis. For many months she has had attacks of dyspnea, rapid and tumultuous pulse, upon the least exertion, and has been confined to her bed most of the time. Last week I was called in a hurry to see her, in the absence of her regular physician, and found her with a pulse of the character described, with much muscular twitching of the face and arms. She was unable to speak. The daughter, who was familiar with such attacks, had been following the usual course of medicines ordered by the attending physician, until she became frightened and sent for me. During the two hours before I saw her she had had the following: 20 granules of glonoin, gr. 1-250; 20 granules of digitalin, gr. 1-67; 2 granules of strychnine arsenate (gr. 1-67), three teaspoonfuls of aromatic spirit of ammonia, one teaspoonful of brandy, and four teaspoonfuls of Magendie’s solution of morphine—which the doctor had said was a full dose! I did not feel inclined to give any further medication! I asked the daughter how often and how much digitalin she had been taking, and she said, 20 granules at a time four times a day every other day. I asked whether she were sure the doctor told her to give that many, and she assured me that she had taken 80 granules every other day for three weeks, and that when she did not, her ‘heart went all to pieces.’ What do you think of this treatment? Patient died in convulsions.”

We absolutely dare not express ourselves. It is indeed remarkable that this good woman lived as long as she did and she certainly was entitled to “die in convulsions” or in any other awful complication one could imagine. It seems to us that there was no “further medication” for you to give—though you might have tried an

emetic and washed out the stomach and bowel as in any case of poisoning. Of course the human body can become accustomed to almost anything and even the massive doses of digitalin you name might be exhibited (for a time) without fatal results. We need not point out to you the utter absurdity of giving twenty granules of digitalin four times a day, or dwell upon the still more ridiculous idea of giving digitalin in such massive doses every other day! Six granules four times daily would be heavy enough medication to meet any pathological conditions conceivable and by giving cactin (gr. 1-67) with each dose of digitalin a very much smaller quantity of the latter drug could be used, in fact we might possibly have been inclined to give cactin and caffeine as a “forlorn hope” had we been called to see this unfortunate patient. With this case as a text it is unnecessary to preach a sermon on the danger of overdosage. “The smallest known, to-be-effective dose—at intervals to effect—remedial or physiological” is a safe rule to follow. Where the “desired effect” does not follow the exhibition of a reasonable quantity of an active drug we may rest assured we have selected the wrong remedy and must diagnose more closely and bring to bear our knowledge—which should be thorough—of drug-action.

Digitalis has killed where the cardiac lesion it was given to cure would not have proven fatal, and morphine has perpetuated more painful conditions than it is pleasant to think of. Overdoses of the “right remedy” are often more injurious than small quantities of the wrong drug. It is the *effective* dose of the *right* remedy which counts!

QUERY 5262.—“Triple Arsenates in Bronchial Hemorrhage.” V. A., Texas, asks: “In debility from bronchial hemorrhage would you advise the triple arsenates with nuclein, if so, will you please give the ordinary dose? The triple arsenates with nuclein will probably prove one of the most satisfactory reconstructants and tonics in the case you mention. We should add sanguiferrin, one dram (one tablet) three

times a day either with or just before meals, according to the age and condition of the patient. The adult dose of triple arsenates with nuclein would be one or two tablets after each meal. May we suggest that you add morning, noon and night four to eight drops of nuclein, dropping it under the tongue and instructing the patient to allow it to be absorbed from the buccal mucosa? The local condition of course requires attention.

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 QUERY 5263.—“Expectorants: Their Nature and Use.—A Criticized Circular.” C. W. H., North Carolina, asks: “What are the proper use of and indications for expectorants? In treating bronchopneumonia, colds, croup, etc., in children and babies should expectorants such as emetine and apomorphine be pushed when the child is in such a state that it will not respond to emetics? Is there not danger in drowning the patient in his own secretions? If so, how far should expectorants be used and what kind? Would sanguinaria be better than the above-named expectorants?”

“Has the so-called “ethical” drug firm joined the counter-prescribing druggist against the physician? Does not the enclosed circular mailed to people by our local druggist look like it? What steps do you think should the physicians take for self-protection? What steps should physicians take for self-protection against the druggist, lay press and the clergy, the latter boosting every readymade compound? Will not the evil of prescription-writing in the end ruin the doctor? He puts all he knows in writing to be copied broadcast—publication of all he knows for no pay. Does the lawyer ever tell a man all of the points and uses of the law and teach him to use said knowledge for self and friends? When the doctor visits a charity patient (which he should do) he runs the risk of losing a paying call. When a minister gets out of bed on a cold night to visit a destitute sick man—I mean if he should break the record and do such a thing—does he risk loss of any cash business?”

On looking over the pamphlet enclosed it appears to be intended for the perusal of the practitioner only and offers him a “ready-made” cough remedy for dispensing purposes. The formula is a good one and (as pointed out) its name does not tell the patient anything and would not cause him to go to the drug-man and ask for “two ounces of cucillana for my cough.” If your druggist sent that printed matter to the laity he is at fault—greatly at fault—and should be made to realize that he cannot play fast and loose with the doctor. We cannot but realize, however, the need for well-made “ready-for-use” preparations; every doctor is not trained to write, off-hand, prescriptions suitable for each case, and if he is, he cannot be sure that the druggist will make it up properly, of effective material. By prescribing, say, elixir of buchu compound or syrup of codeine compound, he knows his patient will get an active medicine. Of course we believe that the small dose of an active remedy carefully selected to meet the pathological conditions present, dispensed on the spot, will prove better than anything else, and a very large proportion of the profession agrees with us, as you know. Moreover, converts are being made by hundreds each month.

Now as to the indication for expectorants. We have, as you are aware, sedative and stimulant expectorants. The case which would respond perfectly to a sedative expectorant would be injured materially by the use of a stimulant. And of course *vice versa*. The sedative expectorant promotes secretion and renders it less tenacious, hence more easily voided. Such drugs as emetine, apomorphine, aspidospermine and lobelin may be taken as examples. These remedies are particularly indicated in acute bronchitis—early stage—when cough is pronounced but expectoration is scanty. All these drugs produce, in larger dose, *centric vomiting*, and occasionally the act of vomiting is beneficial as, owing, first to relaxation and then expulsive spasm, plugs of mucus are expelled from the bronchi. Stimulant expectorants lessen the amount of secretion

—often also acting as tonics to the mucosa. Many drugs of this character exert also an antiseptic (germicide) action. Sanguinarine, senecioin, scillitoxin, creosote, benzoin, ammonium chloride, eucalyptus and cubebina may be quoted as examples. These remedies are given as a rule in subacute or chronic affections of the respiratory tract and where there is excessive expectoration—or retention of secretions. Adjuvants are often essential; for instance, we may have to give some remedy to lessen the excitability of the respiratory center, such as codeine, morphine, heroin, etc., or something “to take up the slack,” as strychnine, brucine, etc. Antispasmodics are called for in some conditions (atropine, hyoscyamine, lobelin—the latter drug being both expectorant and motor depressant), and circulatory stimulants are often indicated when the pulmonary circulation is sluggish. We shall try to give an article upon this subject, although all the recent works cover the ground. Get “Alkaloidal Therapeutics” and “The Everyday Diseases of Children,” Doctor; they will serve you well.

QUERY 5264.—“Infantile Paralysis.” A. H. M., Oklahoma, has a little patient who presents the following clinical picture: Boy, light complexion, 17 months old, weight 21 pounds, height 32 inches, bright disposition, in good health except slight trouble with constipation. Has never been able to sit up alone nor hold up head, which hangs limply, eyes roll sometimes with a somewhat vacant stare. The child takes an interest in everything and is easily moved to laugh and tries to talk, but has not yet learned to speak any words. The child is a first-born from healthy young parents. Child's body and head are about normal size for height. Lower limbs are slightly emaciated and are not developing with the rest of the body. Child has never been given treatment for the trouble. He has seven teeth. What he would like to know is whether this is a suitable case for the administration of thyroid gland.

This child has a form of infantile paralysis; just where the lesion is situated we cannot

tell without a much clearer idea of the clinical conditions. How about lues? Any injury or abnormality at birth? The fact that the stare is “vacant”, the head rolls and the lower limbs are wasted leads us to fear progressive paralysis. Push avenin, nuclein and calcium lactophosphate and massage the back, neck and limbs thoroughly; better still, use the faradic current. No, Doctor, thyroid gland is not indicated here but neuro-lecithin—with the other agents named—might do much. Test reflexes, etc.; observe and report later.

QUERY 5265.—“And the Man Died—So Did the Woman.” J. C. T., Arkansas, tells us that he was called in consultation with two other doctors some time back, and found a man suffering with swamp-fever (malarial hematuria). The attending physician had given him three doses of calomel, estimated at 40 grains per dose. He lived thirteen days. The doctor writes: “I will give you his last words, then you can guess the rest: ‘I am raw from the tip of my tongue to the bottom of my stomach.’ How is this for heroism? The attending physician held out for more calomel, backed up by the other doctor, so you see where I was with a majority against me. Is it a fact that two are better than one? And are such doses ‘rational?’”

Your very interesting communication strangely enough follows another one outlining still more remarkable medication. The gentleman whose letter we have just answered describes the death of a woman whose physician had been giving her twenty granules of digitalin every three hours. In the two hours prior to his visit (he was called during the absence of the regular physician) she had received twenty granules of glonoin, twenty granules of digitalin, two granules of strychnine (gr. 1-67), three teaspoonfuls of aromatic spirit of ammonia, one tablespoonful of brandy and four teaspoonfuls of Magendie's solution of morphine. The doctor says, “I did not feel inclined to give any further medication,” and concludes, “She died yesterday in convulsions.”

That your man should be "raw from the tip of his tongue to the bottom of his stomach" is no more peculiar than that this unhappy woman should have died in convulsions. You ask whether two are better than one? Yes, Doctor, two "half-posted" alkaloidists are better than one "authority" of this type, but one well-posted positive therapist is worth two hundred practitioners who medicate without the slightest conception of the action of drugs. The man who has been used to inactive medicines might perhaps order alkaloids wholesale once but would never do it again, and it is hard to believe that any practitioner of the present day, having access to medical journals, etc., could push calomel in ten-grain or larger doses in malarial hematuria (the large doses used to be given in the South), but then, it would seem absolutely impossible that any physician could give the medicines exhibited in the other case described. We know that occasionally the "large dose" (especially of digitalin) may be required, but not such doses as are mentioned here! When excessive quantities of a drug are necessary to produce (or maintain) effect we are not using the *right drug*; some other remedy (alone or in combination) will do the work—and in reasonable doses. Cactin and strychnine suggest themselves in the woman's case—or sparteine might have been tried. Forty grains of calomel can do much harm—five grains in divided doses, much good!

QUERY 5266.—"John Chinaman, and Hyoscine, Morphine and Cactin." A correspondent in Luzon writes at length describing the quandary in which he found himself when a Chinaman on the table awaiting injection with hyoscine, morphine and cactin anesthetic prior to operation for the radical cure of hernia confessed himself to be an inveterate opium smoker and user of morphine. "John Chinaman" injected ten to twelve grains of morphine daily. The doctor had invited several local notables to witness the action of the new anesthetic which was to arrive on the incoming mail and expressed himself as feeling intense

relief when the postmaster, one of the invited guests, arrived with packages from The Abbott Alkaloidal Company, which proved however not to contain H-M-C. The U. S. mails were loaded with balm, for the nonarrival of the anesthetic caused the operation to be deferred, but, the doctor writes: "What on earth could we have done had the tablets been there? What is to be done with the morphine addict— increase the morphine and hyoscine or just the morphine, or fill the patient up with his dope and then treat him as an ordinary individual, or refuse to use hyoscine, morphine and cactin at all? The patient absolutely declines ether and chloroform."

We have answered the doctor as follows and should now be pleased to have expressions of opinion from the field, especially from those who may have given this anesthetic to morphine addicts.

Surely, Doctor, there was no great reason for your "quandary." Hyoscine, morphine and cactin compound should have been given to the Chinaman in the usual manner and would probably have proven perfectly efficacious. You see you give H-M-C in either two or three doses, increasing or lessening the last doses as the condition of the patient warrants. The morphine habitue is not either tolerant of or oversusceptible to hyoscine and the action of hyoscine-morphine-cactin being unique is manifest even in such subjects. We are sorry that you did not get the tablets and use them on "John Chinaman." Bear in mind that in very many cases two injections produce an anesthetic sleep—not quite deep enough to permit section of the skin without complaint from the patient, but here a whiff or two of ether or chloroform proves sufficient and the patient sinks into a profound anesthesia which lasts throughout the operation. Hyoscine, morphine and cactin is proving useful in the opium habit; small doses being given as often as necessary to prevent deprivation symptoms. In the meantime elimination is pushed and tonic alternatives are given. Hot baths, high enemata, etc., are useful. Let us hear the experience of the "family."

QUERY 5267.—Myoclonia?" F. H. D., Missouri, writes: "I need help in the following: Male, aged 82, born in Ireland, came to America when five years old, never had any sickness except measles, making a good recovery. Family history good; has been a man of a rugged physique and is well developed. About five years ago he began having what he called spasms of the left leg up to the hip. These attacks last about three minutes. They come on suddenly without any warning, and while they last he cannot control his limb by supporting it with all the strength he can exert. His mind is not affected in any way. It leaves the limb weak, partial paralysis. As time elapses the limb grows weaker, so that now he can scarcely extend it. The last one he had the spasmodic twitchings of the muscles extended to the left shoulder and arm and he says that since this his leg and left side are much weaker than before. He now has to drag his left foot. Tactile sense is good; he complains of numbness on that side, especially the leg. Appetite is good, and he appears otherwise in good health. What is the trouble and what is the treatment? These attacks appear every two to four weeks and sometimes not oftener than once in three months. They may come on during sleep. Exercise or fatigue does not bring them on."

The great age of the patient renders cure unlikely and without a most careful examination it is impossible to say just what the lesion underlying the condition is. Myoclonia is not infrequent in elderly males, and "senile chorea" is usually an evidence of cortical degeneration. In disseminated sclerosis we should not expect such long intervals between attacks and the general clinical picture varies from that given by you. In myoclonia the lower extremities suffer and the affection may be unilateral. The clonic contractions come on suddenly and may be so severe as to appear tetanic. Occasionally the seizure arouses the patient from sleep, but as a general thing an attack ceases when the patient becomes somnolent. The intellect is unaffected and

the face, body and sphincters are not involved. The prognosis in the old cannot be good. Elimination is desirable and you might with advantage give the nervine formula (Vaugh) and small doses of atropine valerianate. Galvanism is suggested and vibration would probably prove useful. Push neuro-lecithin in full doses.

QUERY 5268.—"Calx Iodata in Syphilis." G. H. H., Maryland, is giving calcerin in a case of cerebral syphilis but finds some difficulty in administering it. He gave one No. 00-size capsule four times daily and is increasing the dose gradually by adding first a 2-grain tablet, then two 2-grain tablets, then a 5-grain capsule, but finds it a very cumbersome and awkward way of administering the drug, particularly when the patient is practically without a memory. He asks: "May I push the remedy to a dram three or four times daily and can you suggest an easier way to administer it? I notice you are not enthusiastic about the use of calcerin in syphilis. My patient is very dull mentally. Memory very poor, and he is inclined to sleep a great deal; his general health is fine and he takes outdoor exercise, as chopping wood, etc."

We are "enthusiastic" about calx iodata in syphilis—it is infinitely superior to potassium iodide. We would hardly however suggest such massive doses and have never yet seen a case in which such were indicated. You will probably find iodized calcium, mercury and nuclein combined more effective than calx iodata alone. Such a compound is listed. Five grains of calcerin might finally be added to this tablet, i. e., one 5-grain capsule, and we think this will be all-sufficient. In rare cases it is necessary to run calcerin up to sixty grains per day for a short time, which should be three 5-grain capsules four times daily. Further than this we do not believe it would be wise to go. Elimination must be stimulated in this case to the full extent and we would advise small doses of phosphoric acid with meals. Also iridin, gr. 1-3, three times daily.



MAGNESIUM SULPHATE IN ENDOMETRITIS, etc...
In the *Wisconsin Medical Journal*, C. J. Wallace contributes an interesting article on the treatment of metritis, epididymitis, by the use of magnesium sulphate. His method consisted in pouring an ounce of the crystal magnesium sulphate into the vagina, and confining it there, until by osmosis it has induced a free discharge from the pelvic tissues. This was repeated daily for one week, with the result of reducing a large, spongy, subinvolved uterus to normal dimensions. He also treated with similar success a case of epididymitis, by application of cold saturated aqueous solution of the same salt.

HEMOSTATICS.—We have received several reports showing the efficacy of atropine as a hemostatic in hemophilia. This brings up the query as to the value of the H-M-C (Abbott) in such cases. It has been proved that hemorrhage is much lessened by the use of this anesthetic. There may be occasions where operation is imperative upon a hemophiliac; if so, it would be of the greatest interest to know whether the tendency to hemorrhage is lessened or stopped by the use of this anesthetic, rather than by chloroform or ether. While calcium chloride should be administered previously, if necessary, there are occasions when we have not time to wait for its rather slow action.

FALLACIES ABOUT APPENDICITIS.—In the *Detroit Medical Journal* Cruickshank, treating of appendicitis, discusses the following which he terms fallacies: The appendix is a developmental vestige; it has no important physiological function; it is useless and dangerous; the human being is much better and safer without it; every diseased appendix and every one that has been diseased should be removed at once; the physician's delay in calling a surgeon has sacrificed many lives; there is no medical treatment for appendicitis. "Even in 1888 typhlitis was so well treated at Guy's hospital, London, that not one death had occurred in five years, except to those who were moribund upon entrance (Fagge's "Practice of Medicine), treatment has improved since."

GASTRIC DISEASE.—We have just perused a reprint on the nonoperative treatment of gastric diseases, by Dr. Turk, of Chicago, reprinted from the *New York Medical Journal*. This paper has given us so much pleasure and edification that we desire to call the attention of our readers to it. Probably a copy of it can be obtained by writing

to its author. Do this now, before you forget it; then write and thank us because we called your attention to this paper. Not that we have a word to say against the surgeon or his treatment of gastric disease, only it seems better for you, Doctor, if you can devise means of curing these cases yourself, without sending them to the operating table; and this is exactly the point that Dr. Turk meets in this admirable paper.

QUININE AND ITS SALTS.—The proportion of the pure alkaloid in the various salts of quinine is as follows: Sulphate 74.1, bisulphate 58.8, hydrochloride 81.5, dihydrochloride 81.6, hydrobromide 76.4, and salicylate 68.5. The popularity of the sulphate simply rests on its being first employed, the hydrochlorate and hydrobromide being better in all respects; ready solubility and high alkaloidal content. Howard prefers the dihydrochloride, as being soluble in its own weight of water, and possessing a large proportion of quinine, so that even in tablets it would not readily pass through the bowel undissolved. It is very bitter—*Lancet*. Merck quotes these salts at these prices for single ounces: dihydrochloride 51c., salicylate 48c., hydrobromide 47c., hydrochloride 45c., bisulphate 26c., and sulphate 28c.

TICK FEVER.—In the *Medical Sentinel*, W. O. Spencer contributes an interesting paper on "Mountain Fever," resulting from the bite of the tick. He reports that every case made a good recovery under the following treatment: Calomel and magnesium sulphate, exhibited rather liberally in the beginning and at intervals throughout the attack as occasion demands; salol, phenacetin and quinine in moderate doses for the headache, bodily pains and fever; bismuth and pepsin to allay gastric irritability; strychnine especially during the latter part of the attack, with iron and quinine in tonic doses throughout convalescence. To promote diuresis and diaphoresis, and reduce the temperature during the febrile stage, water internally and externally was freely used. Diet restricted to milk and broth every four hours, until convalescence was established.

HOW TO GIVE DIGITALIN.—Huchard commends three ways of giving digitalin in cardiac affections. The first is to give 1-20 grain in one or two doses for one day. In from thirty-six to forty-eight hours abundant diuresis sets in. If not sufficient this is repeated in eight to ten days. When diuresis ceases very small doses should be prescribed after.

a fortnight and continued for three or four weeks. In the second, sedative or weak doses are given. Palpitation and dyspnea are relieved in mitral diseases, even during perfect compensation. From 1-200 to 1-100 of a grain is given for five consecutive days and repeated every three or four weeks. The third is the cardio-tonic dose, which exercises a cardiac but not a diuretic action, and should be continued for weeks and months with intervals of rest from time to time. From 1-300 to 1-250 of a grain once a day suffices. There is no danger when the drug is used in this way.—*Medical Bulletin.*

MEDICINAL PLANTS.—*The American Druggist* speaks warmly in favor of the cultivation of medicinal plants in America, mentioning the experience of Rittetoe in growing belladonna in the Shenandoah Valley. Of the first year's crop the leaves assayed about thirty-two hundredths of one percent of mydriatic alkaloids, each root producing one stem. Sixty percent of the plants withstood the winter, and in the spring three stems appeared on each root. By October the plants grew to a height of sixty-five inches, the leaves by this time assaying sixty-eight hundredths percent of alkaloid, which is considerably better than most belladonna leaves on the market. In the case of belladonna, *The Druggist* says the increasing scarcity and growing deterioration in the quality of the roots and leaves increase the natural interest in the attempt to cultivate this plant in America. Query: Is this growing deterioration taken into consideration by the manufacturers of tinctures and fluid extracts?

QUALIFICATIONS FOR A NOSTRUM MANUFACTURER.—J. D. G., California, wants to know what qualification is required for a person to run a laboratory for the manufacture of medicines to sell to wholesale and retail druggists. We might with a modicum of truth and startling brevity answer: A maximum of gall, a minimum of conscience, a comfortable working capital, and a genius for writing deceiving advertisements; and, perhaps, a formula or two would be found useful. However, we shall not cut off our querist quite so short, but will add that while the different states have laws regulating the practice of pharmacy, the nostrum manufacturers have been able to exert enough influence on legislators—through the "red-clause" newspaper or otherwise—to secure for themselves specific immunity from the operations of such statutes. The recently enacted pure-food and drug laws are not altogether so favorable to the nostrum interests, but the manufacturers, by observing a few simple precautions, may not only escape any trouble on account of these laws, but may actually turn them to account as aids in their advertising.—*Druggists' Circular.*

CHLOROFORM.—In *The West Virginia Medical Journal* for December, Dr. C. M. Slater contributes an interesting paper on "Chloroform Anesthesia and the Anesthetist." He prefers chloroform and says that the man who makes a specialty of ether should not give chloroform. The practice of surgeons doing minor operations in their offices, calling in neighboring physicians to give an anesthetic to a patient who has had no previous preparation, should

be discouraged. A number of fatalities have occurred from gross neglect in the use of chloroform. Many hospitals, public and private, have at last begun to realize that the experienced anesthetist is necessity.

We would suggest the following as an appropriate question for debate at meetings for medical men: "Resolved, that chloroform and ether should not be administered in any case excepting by skilled anesthetists, in institutions where every safeguard against the serious consequences of these agents could be supplied." We would suggest that the man who takes the affirmative of this question can find in the literature of the last year abundant material for the upholding of his view.

ANESTHESIA.—If you are going to use ether alone as an anesthetic, as directed by Dr. Wood, then do it rightly, according to the most approved manner, as described by Lord in *The Medical Herald*. "Great advantages have been experienced by the use of Crile's method of anesthesia, which consists in introducing the ether by means of rubber tubes in the nostrils, extending to the epiglottis. The previously cocaineized pharynx being packed with gauze, the ether is administered through a funnel filled with gauze, the funnel joined by a large tube and Y to the smaller tubes in the nostrils. Care should be taken to avoid hypersaturation of the gauze, which would allow liquid ether to find its way into the larynx. By holding the funnel upside down this can be readily avoided. The advantages of Crile's method are apparent; but must be experienced to be fully appreciated. The anesthesia is continuous and no coughing when anesthesia is complete. The annoyance from hemorrhage is minimized, the operation shortened, shock and hemorrhage necessarily lessened, and the operation is made less disagreeable and trying to the operator."

BOOK REVIEWS.—*The Lancet-Clinic* calls attention to the flimsy way in which books are "reviewed" by most medical journals, and pays itself a well-merited compliment for its own excellent work in this line. But really, is it worth while for the medical journalist to truly review a book, and for the medical journal to give space to the review? It is worth \$100 to really properly review a book, by any man capable of doing it right. Who is to pay for this? Who will read it when printed? The time given by the writer to one volume of Sajous' work would have easily netted the reviewer \$500, and the reviewer regrets still that he did not take twice the time for it before publishing his sketch. Th ordinary medical journal has not the space for real reviews. This should be the function of a separate publication, a medical "Book News," which prints only reviews, and those of the very best. The ordinary doctor would not subscribe to it, but at a dollar a year it might possibly secure a supporting income. The advertisements should be exclusively of books. If such a journal could be conducted on a strictly impartial basis, not favoring books advertised by it, or published by its own printers, and made to pay expenses, it would meet a real want. Until then we shall continue to have "book notices" instead of real reviews.